

Map 5-3

- Sewer Service Areas Projected to develop between 1996 and 2015
- Areas added to 2015 SSA since 1987 Sewage Plan Update
- Holding Tank Service Area
Wastewater sent to POTW for Treatment
- Boundary between GBMSD and De Pere Service Areas
- Municipal Boundary
- 1995 Sewage Plan Planning Area

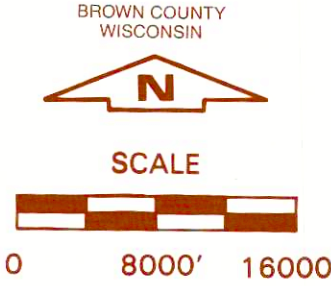
Year 2015 Sewer Service Areas Brown County Wisconsin

Brown County Planning Commission
1996

Note: Sewer Service Area lines portray areas within which sanitary sewer service may logically and economically be extended sometime within the planning period. Except as noted in the text, inclusion in the sewer service areas to a one foot depth on the outer side of the lines to a maximum of 250 feet may be permitted based on the sole review and approval of the Brown County Planning Commission.

Preparation was financed in part by a Water Quality Management Planning grant from the Department of Natural Resources as administered by the Brown County Planning Commission.

Note: Designated Environmentally Sensitive Areas (ESA's) per map 5-2 are unavailable for sewer development.



**1995
Brown County
Sewage Plan**

Prepared by the Brown County Planning Commission
Adopted June 5, 1996
Revised and adopted August 6, 1997

Resolution No. 97-05
Resolution of the Brown County Planning Commission Amending the Adopted Areawide Water Quality Management Plans for Brown County

WHEREAS, Chapter NR 121 of the Wisconsin Administrative Code, entitled Areawide Water Quality Management Plans, is authorized under Section 144.025(1) and (2) and Section 147.25 of the Wisconsin Statutes to protect, maintain, and improve the quality and management of the waters of the state, both ground and surface, and both public and private; and

WHEREAS, at a meeting held on the 5th day of June 1996, the Brown County Planning Commission duly adopted a report entitled, 1995 Brown County Sewage Plan, as the sanitary sewer service area planning element of the four areawide water quality management plans which pertain to Brown County; and

WHEREAS, by motion made on January 8, 1997, the Brown County Planning Commission Board of Directors authorized that the Brown County Planning Commission Sewage Plan Update Steering Committee be reconvened to address certain issues regarding implementation of the 1995 Brown County Sewage Plan raised by the staff of the Planning Commission; and

WHEREAS, those issues and concerns, relating to the Environmentally Sensitive Areas definition and to the procedure for undertaking amendments to the Brown County Sewage Plan, were the subject of discussion and debate open to the public before the Sewage Plan Update Steering Committee; and


WHEREAS, at a meeting held on the 25th day of June 1997, the Brown County Planning Commission Sewage Plan Update Steering Committee approved changes to the 1995 Brown County Sewage Plan as outlined in a series of working papers entitled, "Proposed Environmentally Sensitive Areas (ESA) Definition", "Environmentally Sensitive Areas Standards", and "Proposed Environmentally Sensitive Areas Checklist"; and

WHEREAS, the proposed revisions to the 1995 Brown County Sewage Plan are documented in a series of Brown County Planning Commission inserts to the county sewage plan attached hereto and made a part hereof; and

WHEREAS, at a meeting held on the 6th day of August 1997, the Brown County Planning Commission Board of Directors approved the aforementioned revisions as an amendment to the 1995 Brown County Sewage Plan,

NOW, THEREFORE, BE IT HEREBY RESOLVED, that the 1995 Brown County Sewage Plan, adopted by the Brown County Planning Commission on the 6th day of June 1996 as the sanitary sewer service area planning element of the four areawide water quality management plans which pertain to Brown County, be and the same hereby is amended in the manner identified in the aforementioned Brown County Planning Commission inserts.

BE IT FURTHER RESOLVED, that a true, correct, and exact copy of this Resolution, together with a revised edition of the 1995 Brown County Sewage Plan shall be forthwith distributed to all communities and sanitary districts and sewerage district in the county and to such other bodies, agencies, or individuals as the law may require or as the Brown County Planning Commission or its Board of Directors at its discretion shall determine and direct. The proposed amendment to the Areawide Water Quality Management Plans for Brown County, upon motion duly made and seconded, was adopted at the meeting of the Brown County Planning Commission Board of Directors held on the 6th day of August 1997, the vote being approved with 11 ayes and 0 nays.

Brown County Planning Commission

Richard Hall, President

ATTEST:


Chris Knight, Secretary

**Brown County Sewage Plan Update Steering Committee
Brown County Planning Commission**

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 Village of Howard
Dave Brenner
 City of DePere
Dr. Jack Day
 UW-Green Bay
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 Town of Scott S.D. #1
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Chapter 1

Executive Summary

Planning History & Authority

Comprehensive plans for wastewater collection, treatment and disposal were prepared in 1972 and 1982. The 1972 plan was titled Brown County Sewage and Solid Waste Plan - 1972. The 1982 plan was titled *Brown County Sewage Plan Update* and included an *Addendum 1*. The *1987 Sewage Plan Update* was prepared as an amendment to the 1982 plan.

In Brown County, the 1995 Sewage Plan will serve as the sewer service area planning element to several area-wide water quality management plans (basin plans) which cover Brown County pursuant to Section 208 Public Law 92-500 (entitled, The Federal Clean Water Act).

Area-wide water quality management plans are often referred to as 208 or basin plans. A total of four Basin Plans cover separate portions of Brown County. The Basin Plans are:

1. The Lower Fox River Basin Water Quality Management Plan
2. The Twin-Door-Kewaunee Water Quality Management Plan
3. The Upper Green Bay Basin Water Quality Management Plan
4. The Manitowoc River Basin Water Quality Management Plan

The Brown County Planning Commission (BCPC) is the area water quality planning agency for sewage service area planning. The BCPC prepares the Sewer Service Area (SSA) planning element of the areawide water quality management plan covering Brown County and portions of the adjacent counties. This sewage plan is an element of all four Basin Plans.

Wisconsin Administrative Code, Section NR121, NR110, NR113, and ILHR82, require that wastewater facility plans, sanitary sewer extensions and large on-site systems be in conformance with this element of the approved areawide water quality management or basin plans.

The 1995 Brown County Sewage Plan is a complete revision of the previous sewage plans. Since the initial 1972 planning effort, many changes such as land use trends, population demographics, state and federal regulations have occurred which warrant a total revision of the plan.

This plan will:

1. Identify wastewater collection and treatment needs in Brown County through the year 2015.

2. Use identified environmentally sensitive areas as one criterion in defining future sewer service areas.
3. Identify solutions to the wastewater collection and treatment needs in Brown County.
4. Identify potential on-site wastewater problem areas.
5. Specify for wastewater management the implementation roles of the Brown County Planning Commission and local, state and federal government agencies.

In addition, the 1995 Brown County Sewage Plan was subsequently revised on August 6, 1997. That revision entailed an update and refinement of the Environmentally Sensitive Area definition and of the amendment application manual. Those changes, cooperatively prepared by the staff of the Brown County Planning Commission, the staff of the Wisconsin Department of Natural Resources, and the members of the Sewage Plan Update Steering Committee, are intended to address certain concerns expressed by the staff of the Planning Commission regarding the implementation of the plan, and to more closely meet the applicable water quality provisions and requirements of the State and Federal governments.

Introduction

Sewer service area planning is a water pollution control planning process administered by the Wisconsin Department of Natural Resources (WDNR). Through this process, communities within designated planning areas or with populations over 10,000 are required to develop 20-year growth plans to guide sewered development while preventing water pollution associated with such development.

Specifically, a sewer service area plan defines lands in and around a community that are most suitable for urban development and that can be serviced by a public wastewater collection and treatment system. To protect water quality, new sanitary sewer development is prohibited in environmentally sensitive areas designated in the plan. Leaving these areas undisturbed is crucial to protecting water quality because, if they were to be developed, bacteria, sediment and other pollutants could find an easy route to groundwater, lakes and streams. In addition, important groundwater recharge areas would be disrupted, resulting in diminished underground drinking water supplies.

Sewer service area planning requires communities to take more responsibility for how their community's growth affects water quality. It takes time and effort to produce a plan that's acceptable to all concerned, but the benefits to the environment and to communities are numerous. Sewer service area planning can:

- Protect lakes, streams and groundwater from pollution associated with sewered development.
- Provide local communities with an avenue for planning growth, rather than reacting to unanticipated demands for wastewater treatment and other services (police and fire protection, public water, rescue, parks etc.)

- Provide parameters for designing efficient and environmentally sound sewage treatment and collection systems.
- Provide property owners in the sewer service area with environmentally safe and low maintenance wastewater treatment.
- Prevent environmentally hazardous development that would later need expensive correction.
- Encourage development of suitable vacant parcels that were previously passed over for development.
- Help communities promote the appreciation and wise use of protected "green" spaces within urban areas.
- Help secure grant funding and low interest loans to help communities address sewerage needs.
- Inform developers of community policies and restrictions before development, rather than after the fact.
- Help WDNR wastewater staff make quicker sewer extension and sewer service area amendment approvals. Sewer extensions that usually require an environmental assessment by the WDNR are exempt if they lie within an approved sewer service area.

A sewer service area plan is developed locally, usually by a citizens advisory committee, with assistance from a regional planning commission. In the development of the *1995 Brown County Sewage Plan*, the Sewage Plan Steering Committee provided advisory assistance to the Brown County Planning Commission. The 23-member Sewage Plan Steering Committee was formed by combining the members of the Public Works Subcommittee with representatives from Towns and Town Sanitary Districts. The Public Works Subcommittee is a subcommittee of the Brown County Planning Commission Board of Directors that provides technical assistance to Brown County Planning Staff and the Board of Directors on regional treatment and sanitary district annexation issues. Town Sanitary District representation was included on the Steering Committee to provide insight on growth and treatment issues in rural portions of the County.

A 20-year sewer service area plan defines the amount and location of developable land within which installation of public sanitary sewer may occur. It also identifies environmentally sensitive areas, or "environmental corridors" where land will not be developed. WDNR reviews and approves the final plan.

Once approved by WDNR, a sewer service area plan works as follows: To install new sewer lines, the sewer extension project engineer must get a conformance letter from the Brown County Planning Commission stating that the proposed development lies within the sewer service area. If the proposed extension lies

within an environmentally sensitive area an evaluation must be undertaken by BCPC staff to determine whether other cost effective options exist which avoid or reduce impacts to the ESA. The community sends this letter to the WDNR Bureau of Wastewater, along with the project engineer's construction drawings for staff review and approval if appropriate. Approvals for sewer extensions are typically granted within 15 working days from receipt of the required information.

Certain plumbing plans submitted for state approval also need a sewer service area conformance letter. Most new commercial buildings, and apartments larger than a duplex fit into this category. Before the Department of Industry, Labor and Human Relations - Bureau of Building Water Systems, or the Department of Commerce - Safety and Building Division can approve the plumbing plan, the contractor needs a "conformance letter" from the Brown County Planning Commission stating that the proposed structure is within the sewer service area, but not within the environmentally sensitive areas. As of the date of this report, the Department of Industry, Labor and Human Relations (DILHR) - Bureau of Water Systems is still the state plumbing plan review agency. The Department of Commerce is expected to assume these responsibilities sometime in 1996.

Even the best SSA plan may need corrections. A sewer service area may be changed when development trends are not as anticipated. If a municipality assigns most of its SSA residential acreage allocation to the south, but great housing demand arises near new business developments to the west, the plan can be amended to accommodate growth in a new direction. Or, if a municipality's actual growth turns out to be higher than anticipated, additional lands can be added to the plan. SSA plans have built-in amendment procedures to handle these and other scenarios, however amendments must be approved by WDNR and new lands added to the SSA must have their environmentally sensitive areas identified.

General Description of Planning Area

Drainage

The Brown County planning area for this study is within the Great Lakes - St. Lawrence drainage basin. This drainage basin has been further subdivided into major sub-basins and into a number of watersheds. Of these major sub-basins, the lower Fox River-East River basin is the largest, covering approximately 42 percent of the land area of Brown County. The West Twin River basin is the second largest and covers approximately 12 percent of the County. The remaining sub-basins - the Little Suamico River, Suamico River, Duck Creek, Kewaunee River and Manitowoc River sub-basins - collectively account for approximately one third of the land area within Brown County. In addition, approximately 12 percent of Brown County is drained by 11 small watersheds which are direct tributaries to Green Bay.

Existing Land Use

Land use within Brown County can be divided into four major associations: urban metropolitan, urban satellite, rural residential, and rural.

The urban metropolitan area, contains the major concentrations of urban development. The outlying urban satellite developments occur in the Villages of Denmark, Wrightstown, and Pulaski and in the unincorporated communities of Holland, Suamico, Dyckesville, New Franken and Greenleaf. Substantial rural residential development occurs in the towns of Hobart, Suamico, Ledgeview, Pittsfield, Scott, and Green Bay.

In the outlying rural residential areas, residential uses are on larger lots than in the metropolitan area. Unlike the metropolitan area, residential support services (parks, schools, etc.) as well as commercial and industrial uses are limited. The rural areas of Brown County are primarily agricultural although they do provide some agricultural based industrial and commercial uses. In addition, some non-agricultural based residential and highway commercial uses occur within the rural areas.

Population Analysis and Projections

Brown County, as a whole, has consistently exhibited increases in population from census to census. These increases have been at rates faster than for the State of Wisconsin.

Based upon estimates and projections prepared by the State of Wisconsin Department of Administration, Brown County is expected to continue growing through the year 2015 to a total population of 247,839 persons. In addition, during the entire post-World War II era, the average number of persons per household has consistently decreased, both nationally and within Brown County. This trend is projected to continue.

Goals, Objectives, and Policies

An early step in any planning process is the establishment of goals, objectives, and policies to provide the direction and framework for the overall planning process. The diversity of community interests and local government bodies involved in urban development activities and sewer extensions requires that common goals be established for urban service area planning. Without common goals, the beneficial achievements of one community's actions may be undone by another community. Common goals and objectives also provide a framework for cooperative planning and other areas of inter-community interests.

Goals, objectives, and policies in the 1995 Sewage Plan were established to delineate the sewer service area boundaries and to provide a framework for guiding and assessing future urban growth. These were established based upon a review of the existing *1987 Sewage Plan Update* and the *Brown County Year 2020 Land*

Use and Transportation Plan. In addition, the concerns of the Brown County Planning Commission staff and Sewage Plan Steering Committee members were addressed in the development of the goals, objectives, and policies. Individual governing units should adopt local policies to carry out the goals, objectives, and policies listed in Chapter 4.

Off-Site Wastewater Collection and Treatment Systems

Wastewater Collection and Treatment

Most communities in Brown County have recently completed upgrading their wastewater treatment facilities. As a result, most municipal wastewater treatment systems have adequate capacity through the year 2015. Table 5-3 summarizes the existing and projected year 2015 wastewater flows in Brown County and the design flow capacity of the existing wastewater treatment plants.

Year 2015 Sewer Service Areas

In developing the proposed sewer service areas, it was assumed that existing wastewater treatment plants and interceptors would be used to the fullest extent possible.

In defining the year 2015 sewer service areas for Brown County, the following factors were used:

1. Existing areas served with sanitary sewers.
2. Environmentally sensitive areas within Brown County were excluded from the areas available for development.
3. Existing development trends.
4. Local land use plans and local land use regulations.
5. Population and household size projections.
6. *Brown County Year 2020 Land Use and Transportation Plan* recommendations.

Recommendations

The following recommendations are proposed:

1. Encourage land development to proceed outward from the existing development core.

2. Encourage the use of the existing collection and treatment facilities which have unused, unallocated capacity prior to the extension of new collection and treatment facilities.
3. Discourage sewer extensions into environmentally sensitive areas.
4. Design and construct those sanitary sewers which must cross or follow environmentally sensitive areas so that, once they are placed, they will not have to be replaced or augmented and so that they will not permanently disrupt the areas. ESA's disturbed as a result of extending sewer shall follow the guidelines of a BCPC approved restoration plan.
5. For known and potential on-site problem areas within the County, assure that any facilities planning studies investigate the appropriateness of innovative on-site systems as well as the more traditional, off-site collection and treatment facilities.
6. Utilize recent on-site system development activity within each community as a criteria to determine future sewer service area acreage allocations.

On-Site Wastewater Treatment

According to 1990 U.S. Census data, approximately 11.7 percent of all housing units in Brown County are not served by off-site systems and use on-site systems for the treatment of their wastewater. On-site wastewater systems are those which store, treat, or dispose of wastewater on the site at which the wastewater is generated.

As the result of recent research in the field of on-site systems, the reliability and feasibility of using other non-standard on-site systems have increased. Such alternative, corrective systems include the installation of mound systems, cluster-mound systems, circulating sand filter systems, constructed wetlands, and other state approved systems.

Despite County Code action in 1986 which required all holding tank owners and users to enter into a contract with a state licensed pumper, accountability of holding tank waste continues to be a concern throughout Brown County. Based on pumping report data submitted by licensed haulers to the Brown County Zoning Office, an estimated 28,000,000 gallons of holding tank waste per year are unaccounted for and may never reach a regional treatment facility. Untreated wastewater poses serious environmental and health concerns.

Recommendations

The following recommendations are proposed:

1. Recommend inspection, and if needed, upgrading of existing private waste disposal systems at the time of sale or conveyance of property ownership.

2. Consider the prohibition, by County ordinance, of holding tanks except as a last resort replacement system according to ILHR 83.
3. Consider use of the other on-site wastewater disposal systems in rural areas as discussed in this plan.
4. Further develop a public educational program to inform the public of on-site wastewater treatment systems and the associated operation and maintenance requirements.
5. Continue to institute county wide authority to assure that on-site waste water disposal systems comply with the codes and are functioning correctly.
6. Continue to identify problem areas and enlist the support of the Brown County Planning Commission, County Zoning Administrator, Land Conservation Department, WDNR, and DILHR in providing technical assistance for resolution of the sewage problems.
7. Continue the monitoring and reporting system, developed by the County Zoning Administrator, for tracking disposal of septage and holding tank wastes and maintain the authority to prevent and prosecute illegal discharge/disposal activities and other code violations.
8. Monitor land division activity by community based on method of sewage treatment.
9. Complete on-site system inventory database on systems installed prior to 1980.

Implementation

The proper implementation of this Plan will require the cooperative efforts of the various governmental units within Brown County as well as the DNR, DILHR, and the USEPA. Such a cooperative effort will assure that the recommendations contained within this Plan are carried forth, and that the goals and objectives identified in the plan are not circumvented.

Loans and grants for the construction of wastewater collection and treatment facilities are available from several sources. Eligibility requirements and the availability of funds vary among programs. The awarding of loans or grants under these programs can affect the implementation of the Sewage Plan. Therefore, it is essential that such actions support this Plan.

Financial assistance for improvement or replacement of failing on-site wastewater disposal systems is available from the Wisconsin Fund. The Wisconsin Fund, established through the Private Sewage System Replacement or Rehabilitation

Grant Program in 1978, can provide financial incentives to protect and improve public health, safety and groundwater quality in Wisconsin. These funds are available to an individual or a group of property owners but the agencies require that Brown County be actively involved in such undertakings.

Under Chapter ILHR 83 of the Wisconsin Administrative Code, the Brown County Zoning Administrator is responsible for overseeing the installation of new on-site wastewater disposal facilities. However, once installed, proper operation and maintenance is the responsibility of the individual property owner. This plan recommends continuing the implementation of a county wide monitoring management program to assure proper operation and maintenance. In addition, increased efforts in public education are considered vital to the program's success as well. The Wisconsin Clean Water Fund (CWF) is a State administered environmental loan program that was established in June 1990. The purpose of the fund is to provide low interest rate loans and grants for municipal wastewater projects.

Recommendations

Brown County should:

1. Work closely with communities and town sanitary districts in providing data and planning expertise during the development of facility plans.
2. Assist communities, town sanitary districts and private homeowners in procuring financial assistance through the "Wisconsin Fund" and "Clean Water Fund".
3. Evaluate, on a case-by-case basis, the economic and environmental impacts of proposed regional sewerage service alternatives on existing Brown County Sewerage facilities.
4. Provide comments on revisions and adoption of Chapter ILHR 83 of the Plumbing Code as administered by the Department of Industry, Labor and Human Relations.
5. Coordinate, evaluate, and monitor the actions of local and state authorities on adherence to county land use goals and objectives.

Chapter 2

Introduction

General

In Brown County, the 1995 Sewage Plan will serve as the sewer service area planning element to several area-wide water quality management plans (basin plans) which cover Brown County pursuant to Section 208 Public Law 92-500 (entitled the Federal Clean Water Act). As part of the 208 plan the Brown County Planning Commission is the water quality planning agency for sewer service area planning within Brown County and portions of adjacent counties.

The Brown County Planning Commission has completed a update of the Brown County Year 2020 Land Use and Transportation Plan. The availability of sewer service is one of the most important factors influencing the location and timing of development. Rural development without sanitary sewage service may result in scattered, haphazard land use practices that promote inefficient sprawl conditions. Any attempt to implement a comprehensive and coordinated land use plan could fail without sound, coordinated wastewater management policies.

Wastewater management planning is an integral element of areawide land use planning. Local, state, and federal officials recognize that natural resources are limited. Acknowledging that the location and character of future developments are likely to have a far-reaching impact on the existing environment, the Brown County Planning Commission has studied and identified environmentally significant resources and land areas in the County. These resources directly contribute to the maintenance of local environmental quality, natural productivity, and amenity.

Significant Changes

Many “significant changes” have occurred impacting sewerage planning in Brown County since the 1987 Update. The following list summarizes the major changes:

- The Village of Pulaski annexed and connected via force main to the Green Bay Metropolitan Sewerage District plant for wastewater treatment.
- The Bayview Interceptor within the Village of Howard was constructed to accommodate future loads from the Village of Pulaski, the southwest portion of the Town of Suamico and future development of the west area of the Village of Howard.
- The Royal Scot Sanitary District abandoned their Wastewater Treatment Plant (WWTP) and connected via force main to GBMSD plant for wastewater treatment.

- Bayshore and Dyckesville Sanitary Districts finalized construction of interceptor sewer along the east bay shore which connects to the GBMSD plant for treatment.
- Oneida Tribe executed a sewer service agreement contract with GBMSD to allow wastewater treatment to the City of De Pere WWTP. The Oneida Tribe undertook a long term wastewater management evaluation to study future tribal sewage needs within the reservation.
- Wayside/Morrison Sanitary District constructed a WWTP to serve existing development.
- Unincorporated community of Lark formed a sanitary district and developed a facilities plan which recommends connection to the Wayside/Morrison WWTP for treatment.
- Unincorporated communities of Mill Center, Kunesh and Anston formed a sanitary district and conducted facilities planning which recommended connection to the Bayview Interceptor.
- Suamico Sanitary District initiated facilities planning.
- Wrightstown Sanitary District #1 (Greenleaf) completed facilities planning and completed a significant plant upgrade.
- Unincorporated community of New Franken developed a sanitary district and has connected to the Royal Scot Sanitary District force main.
- Since 1992, Brown County Planning Commission staff has reacted to over 40 Sewer Service Area Amendment requests impacting over 5,000 acres of land.

The sewage plan is a planning document to be used as a general guide for development. The plan provides a sound framework for developing the pollution abatement program in Brown County. It includes a degree of flexibility through an amendment process to allow for refinement as specific developments and projects are designed and implemented. In order to confirm details of inter-municipal participation and financing, specific treatment disposal methods and sites (facilities plans), and other critical details, an intermediate planning stage is recommended prior to implementation of the report recommendations.

Public Information, Education and Participation

Chapter NR 121 of the Wisconsin Administrative Code requires that “during development and prior to formal adoption, areawide water quality management plans for non-designated areas or portions thereof shall be subject to a public participation process including, at a minimum, a public hearing”. Disseminating

information and conducting public meetings has long been recognized as a means to gain understanding and constructive criticism from the public resulting in a more workable plan. The following paragraphs explain the public participation elements used in the development of the 1995 Brown County Sewage Plan.

Sewage Plan Update Steering Committee

As previously mentioned, the 23-member Sewage Plan Update Steering Committee was created to guide Brown County staff on the development of the Sewage Plan. During the course of the plan's development, ten meetings were held by the Brown County Sewage Plan Update Steering Committee. All meetings were open to the public. Committee agendas included discussion and action on numerous sewerage planning and policy issues. Key actions taken by the Subcommittee include the following:

- Supported the development of a new Environmentally Sensitive Areas definition which includes buffer requirements for stream corridors and wetlands.
- Supported the requirement that all agricultural lands within the SSA boundary be designated a specific use, such as residential, business, industrial, or public.
- Supported the development of a Sewer Service Area (SSA) Amendment manual to reduce staff time in the processing of future SSA Amendment requests.
- Supported the establishment of a \$500 SSA Amendment application fee to cover Brown County Planning Commission application review costs.
- Supported the requirement of public water service under Policy D (Good Land Use Planning) within the Sewer Service Area Amendment Manual.
- Supported the requirement that municipalities hold a public hearing for land involved in an acreage swap (Policy A) prior to submittal of an SSA Amendment application.
- Supported the use of a universal density figure of 2.2 dwelling units-per-acre as a factor in calculating acreage allocations for each community and sanitary district.
- Supported the requirement that mandatory inspections occur on all on-site systems for all property transfers.
- Supported the policy that planned residential golf course developments that are not part of a subdivided residential lot and which do not meet the environmentally sensitive areas definition, be designated as business use.

- Supported the policy that areas proposed as campground facilities within the sewer service area boundary be designated as a business use. These areas shall not count against a community's or district's SSA residential acreage allocation.
- Supported the development of an "ultimate sewer service area boundary" after the Brown County Year 2020 Comprehensive Land Use and Transportation Plan is adopted.
- Supported the consideration of recently developed infill parcels as justification for additional Sewer Service Area (SSA) acreage.
- Supported the requirement that SSA amendment applications, which include unincorporated lands as part of the request, include a letter from the City or Village which is granted extraterritorial review authority per Wisconsin Statutes 66.32.

Individual Community and Town Sanitary District Meetings

As part of the update process, Brown County Planning Commission staff met at least one time with representatives from each community and town sanitary district. During the meetings, staff discussed the Sewage Plan Update process and reviewed population and acreage projections. Discussions also included projected growth areas for inclusion into the 2015 SSA boundary and the potential impact of the proposed environmentally sensitive area (ESA) definition on vacant lands.

Public Hearings

A formal public hearing was held on June 5, 1996, to comment on the 1995 Sewage Plan. All comments were recorded and presented to the Brown County County Planning Commission Board of Directors..

A second public hearing was held on August 6, 1997 to obtain public comment on, and reaction to, the proposed changes to the County sewage plan. All comments were also recorded and presented to the Brown County Planning Commission Board of Directors at its August 6, 1997 meeting.

Chapter 3

General Description of Planning Area

The planning area for the 1995 Sewage Plan includes all of Brown County and portions of Kewaunee, Shawano, Oconto, and Outagamie Counties (see Map 5-1). The planning area has expanded over the past decade primarily due to off site treatment needs in isolated satellite development.

Drainage

Brown County is located within the Great Lakes - St. Lawrence drainage basin, and approximately one-fourth of the County is drained by streams directly tributary to Lake Michigan. The remainder of the county's land area is drained by streams tributary to Green Bay and through Green Bay to Lake Michigan.

Within Brown County, the Great Lakes - St. Lawrence basin has been subdivided into seven major sub-basins and associated watersheds (see Map 3-1). Additional smaller watersheds are directly tributary to Green Bay. The seven major sub-basins and their tributary watersheds are:

Upper Green Bay Basin

Little Suamico River

Suamico River

- Haller Creek
- North Branch Suamico River
- Potter Creek
- South Branch Suamico River
- West Branch Suamico River

Lower Fox River Basin

Duck Creek

- Trout Creek
- Beaver Dam Creek

Apple and Ashwaubenon Creek

- Hemlock Creek
- North Branch Ashwaubenon Creek
- South Branch Ashwaubenon Creek
- Dutchman Creek

Plum Creek

Lower River River-East River

- Bower Creek
- Baird Creek

Twin-Door-Kewaunee Basin

Red River and Sturgeon Bay

- Gilson Creek

Kewaunee River

- School Creek
- Scarboro Creek

W. Twin River

- King Creek
- Buck Creek
- Neshota River
- Twin Hill Creek
- Devils River

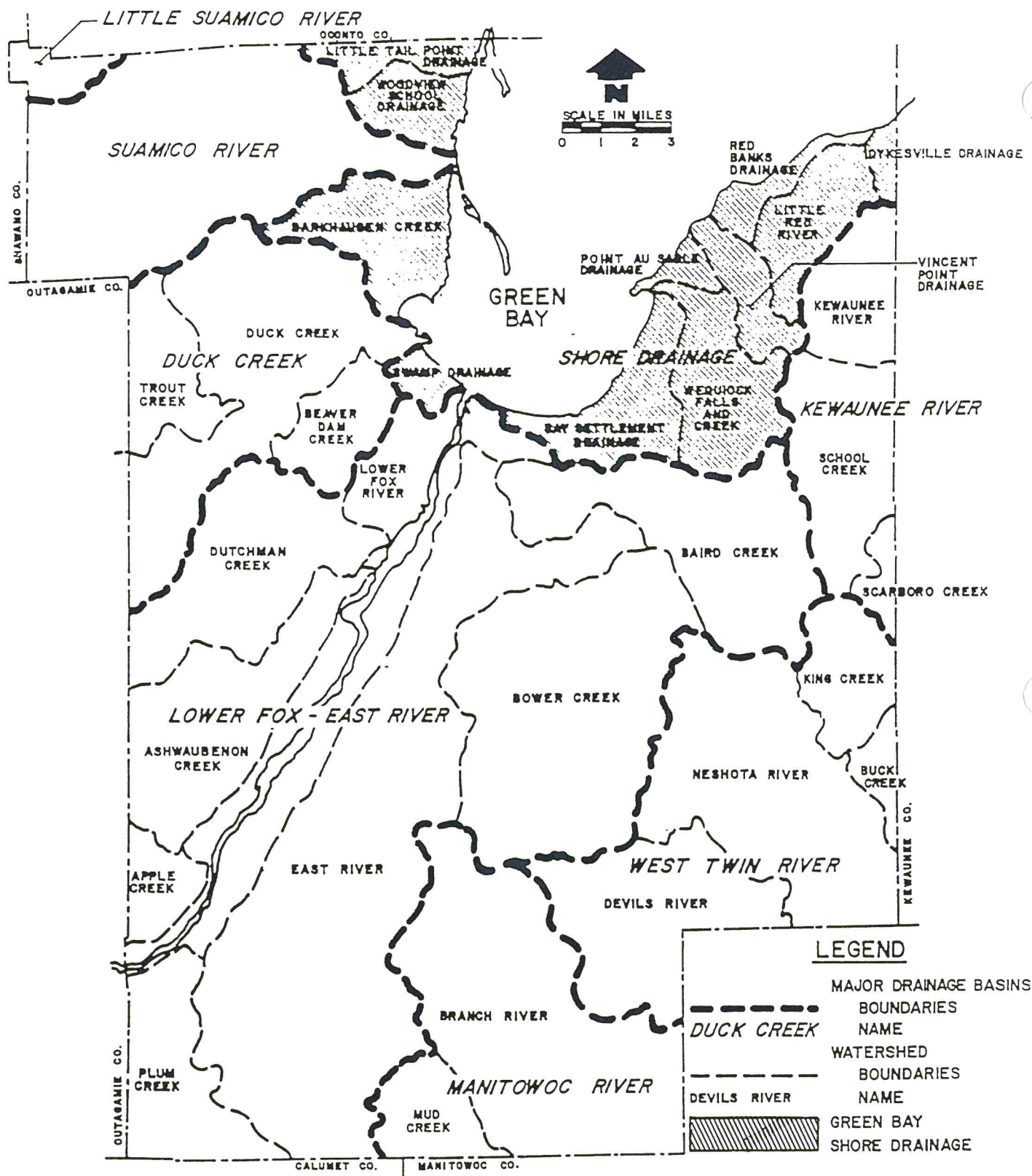
Manitowoc River Basin

Branch River

Mud Creek

The Lower Fox River - East River is the largest of the subbasins, covering approximately 42 percent of the land area of Brown County.

Covering approximately 12 percent of the land area, the West Twin River subbasin is the second-largest in the County. The basin includes Lily Lake, Devils River, Neshota River and its intermittent tributary, King Creek.



Map 3-1

Major Drainage Basins and Watersheds Brown County, Wisconsin

Both the Neshota River and King Creek suffer from excessive sediment deposition and turbidity from nonpoint pollution sources such as cropland erosion and streambank pasturing. The Wisconsin Department of Natural Resources, in its 1995 Water Quality Management Plan, gave the West Twin Watershed a high ranking indicating its potential to be selected for a Nonpoint Pollution Abatement Project. The remaining basins collectively account for approximately one-third of the land area of Brown County. The eleven small watersheds directly tributary to Green Bay (shaded on Map 3-1) drain approximately 12 percent of the County.

Included in the Lower Fox River basin is the Green Bay Area of Concern (AOC), which extends from the De Pere dam of the Lower Fox River north to an imaginary line across the bay from Point-au-Sable to Long Tail Point. Designated by the International Joint Commission of the United States and Canada, the AOC is one of 43 Great Lakes Basin sites which have been identified as having persistent environmental problem. Problems include the presence of toxic chemicals, sediments, and overloads of nutrients from agriculture and urbanized sites. With the assistance of numerous private individuals and agency personnel, the Wisconsin Department of Natural Resources developed the *Lower Green Bay and Fox River Remedial Action Plan (RAP)* in 1988. Through long-range planning, the RAP Committees have worked to restore environmental quality and public use to the area of concern.

Existing Land Use

Brown County covers a surface area of 341,921 acres or 534 square miles which, for the purposes of this analysis, have been broadly classified as urban or rural. According to the 1990 land use inventory completed by the Brown County Planning Commission staff, the urban area consists of 18.9% of the total area of the County or 101 square miles. This urban metropolitan region includes the Villages of Allouez, Ashwaubenon, and Howard; the Town of Bellevue; and the cities of De Pere and Green Bay. The balance of Brown County is designated rural and constitutes 81.1% of the total area or 433 square miles. Some urban uses, such as residential schools and commercial services, do exist within the rural classification. Such areas are found primarily in the Villages of Denmark, Pulaski, and Wrightstown.

By far the largest land use category in the County is the combined total for agriculture, woodland, and wetlands, which together account for approximately 84% of the rural and 31% of the urban classifications. However, because this land is so abundant, it is often converted to urban uses. The most dramatic impact of this change is visible within the boundaries of the six communities which constitute the major urban portion of Brown County. Between 1970 and 1990, 14,455 acres of land classified as agricultural and 9,323 acres of woodland/vacant land were developed. This trend can be expected to continue as growth occurs outward from the urban area.

The average patterns of land use are consistent with those one would expect in a growing urban region. Residential, commercial, and industrial uses dominate the

urban category. The City of Green Bay, given its size, age, and location, has the largest concentration of all land use categories. Established communities, such as Allouez and De Pere, contain land functions typical of older growth areas, while the three remaining urban communities, Ashwaubenon, Howard, and Bellevue, are characterized by expanding development in the commercial and residential categories.

While agriculture is the dominant rural land use category, residential use in the rural towns has increased tremendously. Between 1970 and 1990, residential land use increased by 10,356 acres, bringing the total to 14,479 acres. During the same period, residential use in urban areas increased by 4,984 acres, raising the metropolitan area total to 12,660 acres. As is evident by the numbers, acreage devoted to residential use in the rural towns has surpassed residential land use within the metropolitan area of the County. This trend, along with that of increasing residential acres per capita, warrants particular attention with regards to this plan.

Population Analysis and Projections

Three base years (1970, 1980, and 1990) and recent population projections prepared by the State of Wisconsin Department of Administration and the Brown County Planning Commission were used to estimate future population growth by community.

The resulting projections show Brown County continuing to grow at a relatively high rate through the year 2015, surpassing the growth rate for Wisconsin as a whole. As displayed in Table 3-1, Brown County has consistently exhibited increases in population from census to census. At the same time, the various minor civil divisions (towns, villages, and cities) of the County have varied in their patterns of growth. Most notable are the sizeable gains in population for the Towns of Bellevue and Suamico and the Village of Howard. These municipalities are expected to see their populations increase by 50 percent by 2015. The only anticipated losses are in the Towns of Glenmore and Morrison.

The 1995 population estimates from the Wisconsin Department of Administration indicate that the population of Brown County has risen to an estimated 209,077, an increase of 14,483 people, or 7.4% above the 1990 U.S. Census figure of 194,594 and a 32.1% increase over the 25 year period from 1970 - 1995. This notable growth occurred for the most part in the City of Green Bay and in the incorporated and unincorporated areas adjacent to the City. This pattern of increase is expected to continue at a significant pace. A 27.36% rise in population during the 25 year period from 1990 - 2015 is expected to bring the Brown County total to 247,839 persons.

Recently, the number of persons per household has been declining while the population has been climbing, a condition found in many other Wisconsin communities and nationally as well. This trend indicates that more dwelling units are needed to accommodate a given population. From 1970 to 1990, the county aver-

age household size dropped from 3.5 to 2.62. This is in line with the national average which fell from 3.2 to 2.63. Furthermore, data gathered by the Brown County Planning Commission shows a steady increase in lot sizes served by public sewer. Hence, a direct relationship can be drawn between these numbers and the increasing amount of land devoted to residential use.

Population and land use data clearly indicate that Brown County and the Green Bay urban area are in a period of consistent growth. According to the *Brown County Year 2020 Land Use and Transportation Plan*, urban expansion is being fueled by a strong, diversified economy that has lead Brown County to become one of the major growth areas of Wisconsin. This pattern is expected to continue through the planning period.

Brown County Population Counts, Estimates and Projections

Table 3-1

	1970	1980	1990	1995	2015	Percent Change		
						1980-1990	1990-1995	1990-2015
Brown County	158,244	175,280	194,594	209,077	247,839	11.0%	7.4%	27.36%
Bellevue	1,736	4,101	7,541	9,446	15,098	83.9	25.3	100.21
Eaton	1,049	1,106	1,128	1,176	1,277	2.0	4.3	13.21
Glenmore	1,110	1,046	1,057	1,072	1,042	1.1	1.4	-1.42
T. Green Bay	958	1,106	1,292	1,449	1,868	16.8	12.2	44.58
Hobart	2,599	3,765	4,284	4,771	6,312	13.8	11.4	47.34
Holland	1,211	1,268	1,237	1,272	1,237	-2.4	2.8	0.00
Humboldt	1,101	1,281	1,334	1,390	1,541	4.1	4.2	15.52
Lawrence	1,622	1,431	1,328	1,429	1,674	-7.2	7.6	26.1
Ledgeview	1,365	1,535	1,568	1,807	2,285	2.1	15.2	45.7
Morrison	1,473	1,565	1,493	1,494	1,445	-4.6	.1	-3.22
New Denmark	1,203	1,420	1,370	1,449	1,569	-3.5	5.8	14.53
Pittsfield	1,647	2,219	2,165	2,269	2,514	-2.4	4.8	16.12
Rockland	983	882	974	1,147	1,462	10.4	17.8	50.10
Scott	1,969	1,929	2,044	2,292	2,660	6.0	12.1	30.14
Suamico	2,830	4,003	5,241	6,280	8,897	30.3	20.4	70.64
T. Wrightstown	1,463	1,705	1,750	1,873	2,188	2.6	7.0	25.03
Allouez	13,753	14,882	14,431	14,820	14,946	-3.0	2.7	3.57
Ashwaubenon	10,042	14,486	16,376	17,295	18,101	13.0	5.6	10.53
Denmark	1,364	1,475	1,612	1,715	1,949	9.3	6.4	20.91
Howard	4,911	8,240	9,874	11,433	15,327	19.8	15.8	55.23
Pulaski	1,717	1,875	2,200	2,534	3,333	17.3	15.2	51.50
Wrightstown	1,020	1,169	1,262	1,481	1,866	8.0	17.4	47.86
De Pere	13,309	14,892	16,594	18,397	22,001	11.4	10.9	32.6
Green Bay	87,809	87,899	96,466	100,786	117,247	9.7	4.5	21.54
Source	C	C	C	D*	B**			

Notes:

B = Brown County Planning Commission

C = U.S. Department of Commerce-Bureau of the Census

D = Wisconsin Department of Administration-Demographic Services Center

* Preliminary Estimate

** Adjusted Small Area Forecast, August 1995

Chapter 4

Goals, Objectives, and Policies

An early step in any planning process is the establishment of goals, objectives, and policies to provide the direction and framework for the overall planning process and to guide the future implementation of the plan. Goals can be defined as statements of direction in which planning or action is aimed. Objectives are specific statements of desired results which are measurable and contribute to the accomplishment of a goal. Policies are courses of actions or guidelines directed toward achieving objectives which should be followed in the decision making process.

Goals, objectives, and policies were established to delineate the sewer service area boundaries and to provide a framework for guiding and assessing future urban growth. As a framework for the Goals, Objectives and Policies, this chapter will include: 1.) a review of the recommendations of the *1972 Sewage Plan*; 2.) a review of the *Brown County Year 2020 Land Use and Transportation Plan*; and 3.) the goals and objectives of this *1995 Sewage Plan* as developed by the Sewage Plan Update Steering Committee of the Brown County Planning Commission and staff.

Review of Existing Plans

Brown County contains two cities, six villages and 16 towns. Most of these governing units and the Oneida Tribe of Wisconsin have adopted or are preparing comprehensive development plans. Brown County itself adopted a county-wide Sewage Plan in 1972 and county-wide Development Plan in 1967. The original sewage plan was updated in 1982 and 1987 while the *Brown County Year 2020 Land Use and Transportation Plan* was adopted in 1996.

A recommended growth scenario named the "Recommended Plan" was developed for the *Brown County Year 2020 Land Use and Transportation Plan* to guide the direction in which development would occur. The development of an implementation strategy to guide recommendations within the Plan will be pursued.

The 1972 Sewage Plan

The *1972 Sewage Plan* stated recommendations rather than specific goals, objectives, and policies. The following recommendations laid the foundation for sewerage planning in Brown County:

1. Prevent Urban Sprawl.
2. Promote Orderly and Efficient Development and Economy of Public Facility Design.

3. Establish a Regional Sewerage Commission or Authority.
4. Plan and Design Interceptors and Treatment Facilities on a Watershed Basis Rather Than According to Political Subdivisions.
5. Carefully Plan Low-Density Rural Residential Growth.

A detailed listing of the recommendations are included in Appendix A.

For the most part, recommendations identified above have been implemented during the past 30 plus years of growth in Brown County.

Brown County Year 2020 Land Use and Transportation Plan

The *Brown County Year 2020 Land Use and Transportation Plan* has developed goals, objectives and guidelines which reflect the desired direction of growth in Brown County. Those having direct impact on sewerage planning efforts include the following:

Land Use Objectives

Promote a balanced land use pattern that discourages sprawl.

Promote a balanced allocation of space to the various land use categories which meet the social, physical, and economic needs of the future county population.

Promote a distribution of the various land uses which will result in a compatible arrangement of land uses.

Promote a distribution of land uses which will result in the protection, restoration, and wise use of the natural resources of the county, including its soils, lakes and streams, wetlands, woodlands, wildlife, groundwater, air and views.

Promote a distribution of the various land uses which assures the economic provision of supporting transportation, utility, and public infrastructure systems.

Promote the planned development and preservation of residential areas within a physical environment that is healthy, quiet, safe, convenient and attractive.

Promote the preservation, development, and redevelopment of a variety of suitable industrial and commercial sites both in terms of physical characteristics and location.

Promote the preservation and provision of open space to enhance the total quality of the regional environment, maximize essential natural resource availability and accessibility, give form and structure to urban development, and facilitate the ultimate attainment of a balanced year-round recreational system providing a full range of accessible facilities for all ages.

Promote the preservation of appropriate prime agricultural land areas.

Promote the preservation of those suitable areas which provide wildlife habitat.

Land Use Guidelines

General Development Patterns

A. Priorities for developing new land uses in the county:

1. New developments should be sited, to the extent possible, in areas currently served by public utilities, transportation infrastructure, parks and recreation areas, primary and secondary educational facilities, and other key urban services out of environmentally sensitive areas and away from large blocks of intensive agricultural use.
2. Where desirable new land uses cannot be sited in areas as described above, those new uses should be sited in areas immediately adjacent to these areas where extension of infrastructure and services can be made as efficiently as possible and in conformance with adopted sanitary sewer service area plans.
3. Where desirable new land uses must be sited in the undeveloped portions of the county outside those areas described above, that development should be proposed in a manner that will ensure proper on-site waste disposal and protect groundwater sources. In rural areas, densities should follow the recommendations of the local comprehensive plan.

Neighborhood Residential, Office, Commercial and Industrial Development

- A. Development should be located in neighborhood units which are physically self-contained within clearly defined boundaries such as arterial streets and highways, major park and open space reservations, or significant natural features such as rivers, streams or hills.
- B. Developments should also have the following types and levels of services and should be planned to use available capacity in existing transportation and utility systems to the extent possible including:
 1. Existing or proposed centralized public sanitary sewer and water supplies.
 2. Efficient storm water conveyance systems.
 3. An easily accessible multi-modal transportation system serving key employment, commercial, cultural, educational and governmental centers.
 4. Local commercial facilities offering primary goods and services.

- C. Development should only be permitted in those areas where safe, on-site sewage disposal systems and private wells meeting current groundwater standards can be accommodated. In the absence of public sanitary sewer service, on-site disposal systems should be used only in accordance with the following:
1. County regulations which include performance guidelines for on-site disposal systems.
 2. On-site soil absorption sewage disposal systems should be used only in areas covered by soils which are suitable for the system being considered.
 3. The use of on-site disposal systems should only be used when no public infrastructure options are possible and only in the following types of development:
 - a. Rural residential development;
 - b. Suburban density development, but only in areas already committed to such use;
 - c. Isolated urban land uses which may be required in unsewered areas such as transportation-related businesses, agricultural-related businesses, communications facilities, utility installations, and park and recreation sites.
 4. The use of various types of on-site disposal systems should be in accordance with the following:
 - a. New development in unsewered areas should be designed to be served by private septic disposal systems and high-tech disposal systems approved by state and county inspectors;
 - b. Wherever possible, high tech disposal systems should be used as a replacement for failing conventional systems. Holding tanks should only be used as a last resort or as a temporary solution when other systems are not available or appropriate.
 5. New urban development served by on-site sewage disposal systems should be discouraged in areas planned to receive sanitary sewer service during the life of this plan. Where such development is permitted, it should be designed so that the public costs of conversion to public sanitary sewer service are minimized. Except in the case of failing existing systems, new holding tanks should only be permitted in those areas where public sanitary sewer service is planned for construction within five years of the installation of the holding tank.
- D. In those cases where sanitary sewer service is extended to an outlying developed area through an undeveloped area, laterals from that line should not be extended to support unplanned development along that line which would foster urban sprawl.

Prime Agricultural Lands

- A. Prime agricultural lands, wherever possible, should be preserved for agricultural use or kept in open space.
- B. City councils, village and town boards and local plan commissions should discourage, wherever possible, the conversion of good farmland for urban development.

Protection of Environmentally Sensitive Resources

A. Soils:

- 1. Development should only be allowed on soils considered suitable in the Brown County Soil Study for the type of development proposed. Primary environmental corridors, as designated in this Plan to protect sensitive environmental areas, should not be developed.

B. Lakes and Streams:

- 1. The shoreline between all surface waters and adjacent land uses should be maintained in a natural state where possible, and protected with a minimum 35 foot buffer zone of vegetation which is effective in filtering land runoff, stabilizing shorelines against erosion, and providing riparian habitat. Where natural vegetation is insufficient to prevent shoreline erosion, riprap should be encouraged over sheet piling or concrete revetments to minimize habitat loss.
- 2. In currently undeveloped areas, not more than 25 percent of the shoreline of all natural lakes and streams should be allocated to urban development, except for park and recreational uses. Land uses should maximize public access and minimize environmental impacts, giving preference to such land uses as public fishing piers, fish and wildlife habitats, walkways, bike paths, and parkways. Urban land uses should give preference to public, commercial, cultural, and social uses over industrial or non-water dependent uses. Parking areas and other land uses should be set-back and separated from the water by a vegetative buffer.
- 3. All land uses should include adequate on-site stormwater management measures so that stormwater runoff volumes and pollutant loads are not increased over pre-development (natural landscape) conditions for a 25-year, 24-hour storm event. Non-conforming uses should become conforming as lands are redeveloped.

All land uses should provide on-site stormwater retention, detention and conveyance systems that promote infiltration, maintain natural vegetated drainageways, protect water quality and aquatic habitats and provide environmental corridors that link green spaces and significant habitats.

Non-conforming land uses should become conforming as lands are redeveloped.

4. Development of floodplains shall meet standards set forth in NR116 for appropriate floodplain districts. No unauthorized structure or fill should be allowed to encroach upon and obstruct the flow of water in any stream channels or floodways.

C. Wetlands:

1. All wetlands and their ecological functions should be maintained unless documentation is provided that a wetland fill is UNAVOIDABLE.
2. The perimeter of all wetland areas should be maintained in a natural and vegetated state as a buffer to protect the wetland from the detrimental effects of surrounding land uses. The buffer should consist of a minimum 35-foot setback of open space and vegetated filter for land runoff.
3. All wetlands shall be designated as environmental corridors to protect their ecological functions and to provide natural linkages between isolated wetlands and other environmentally sensitive areas/habitats, thereby increasing their functional size and biodiversity.

D. Woodlands:

1. Upland woodlands are considered an important county natural resource. To the extent possible, these woodlands should be included as part of a contiguous network of environmental corridors.
2. For demonstration and educational purposes, the woodland cover within the county should include a minimum of one 40-acre or larger woodlot devoted to each major forest type: dry, mesic or lowland forest. In addition, the best remaining examples of the native forest vegetation types representative of the pre-settlement vegetation should be maintained in a natural condition and be made available for research and educational use.

E. Prairies:

1. Native prairies representative of pre-settlement vegetation should be maintained in a natural condition and be made available for research and educational use.
2. Prairie restoration activities currently underway should be encouraged and expanded. Additional appropriate sites for prairie restoration should be identified and set aside for future restoration efforts.

F. Wildlife:

1. Sufficient habitat should be maintained and/or established to ensure a diversity of intact, self-sustaining biological communities. Remnant habitats should be linked together through the designation and protection of environmental corridors.
2. Degraded habitats should be enhanced or restored where possible to regain their benefits, create more functional open space and provide sufficient habitat where it is lacking.
3. The largest and best examples of native habitats representative of pre-settlement conditions should be preserved and protected as heritage areas.
4. Open space should be maintained surrounding significant habitat areas to provide a buffer between land use developments and wildlife populations.

G. Geology:

1. To the extent possible, areas along the escarpment should be preserved as county natural areas and acquired as parcels become available to ensure its protection.

1995 Sewage Plan Goals, Objectives, and Policies

The goals, objectives, and policies stated below were developed based on a review of the recommendations from the previous sewage plans and of the various comprehensive or master plans which have been prepared by the governing units within Brown County. In addition, the concerns of the Brown County Planning Commission staff and Sewage Plan Update Steering Committee members were identified and appropriate statements were developed.

The diversity of community interests and local government bodies involved in urban development activities and sewer extensions requires that several common goals be established for urban service area planning. Common goals can prevent the beneficial achievements of one community's actions being undone by another community. Common goals and objectives can also provide a framework for cooperative planning in other areas of inter-community interests, such as transportation, potable water, recreation, public service and economic development.

Individual governing units should consider and adopt local policies that are consistent with the goals, objectives, and policies listed below. These local policies should further refine the goals, objectives, and policies relating to wastewater treatment in order to reflect the diverse needs and the unique physical, social, and political character of each community. Each community should assess its own unique circumstances and develop appropriate local policies for achieving these goals and objectives.

The following goals, objectives, and policies have been identified for Brown County by the Sewage Plan Update Steering Committee. These goals, objectives, and policies primarily deal with sewage collection and treatment.

Goal 1: Provide Adequate Wastewater Treatment.

Objective A: (Off-site Systems) - Institute technically and economically feasible wastewater collection, treatment, and disposal at the various treatment plants.

Policy 1: Cooperate with areawide 208 planning agencies in identifying appropriate technologies for each wastewater treatment facility.

Objective B: (On-site systems) - Where off-site wastewater treatment is not politically, environmentally, economically, and socially feasible and the proposed development is in accordance with areawide and community plans, encourage use of the appropriate on-site systems for the area involved.

Policy 1: Soil absorption systems are the preferred method of on-site treatment, unless environmentally unsound.

Policy 2: In areas where a conventional soil absorption system will not function properly, an alternative system may be developed.

Policy 3: Holding tank systems are only appropriate as replacement systems where all other systems are not appropriate.

Objective C: Assure functional operation of all on-site wastewater systems.

Policy 1: Require mandatory inspection of all on-site systems for all property transfers.

Policy 2: Continue participation in the Wisconsin Fund program for the replacement of failing on-site systems.

Policy 3: Maintain and increase enforcement of a county wide reporting system for pumpings from on-site wastewater systems.

Policy 4: Establish an aggressive county educational program outlining the responsibilities of owning and operating an on-site system.

Goal 2: Minimize Governmental Sewerage Service Costs.

Objective A: Plan service extensions.

Policy 1: Avoid duplication of facilities.

Policy 2: Plan on a watershed basis, not according to political subdivisions.

Policy 3: Maintain a system for review of the installation of public sewerage systems within the Brown County Planning area.

Objective B: Stage the installation of facilities.

Policy 1: Plan sewerage extensions and treatment facilities so that they can be installed incrementally as needed in a cost effective manner.

Policy 2: Size for design year population equivalents.

Policy 3: Avoid long extensions across undeveloped property.

Objective C: Assess costs of facilities based upon service received.

Policy 1: Formulate sewerage assessment policies that will encourage compact development and discourage scattered development.

Policy 2: Base the fees for collection and treatment upon the costs to provide these services.

Policy 3: Require those requesting the installation of sewage transportation facilities to pay for installation.

Goal 3: Promote future development in Brown County into areas able to provide the necessary urban services.

Objective A: Recognize urban service areas within Brown County as defined by the *Brown County Year 2020 Land Use and Transportation Plan*.

Policy 1: Use this Sewage Plan as one component in urban service area definition.

Objective B: Assure that development proposals are consistent with established plans.

Policy 1: Require development proposals to conform with this sewage plan, the *Brown County Year 2020 Land Use and Transportation Plan*, and local comprehensive or master plans.

Chapter 5

Off-Site Wastewater Collection and Treatment Systems

Wastewater Collection and Treatment

In Brown County, most communities with wastewater treatment plants completed upgrading their treatment facilities under the United States Environmental Protection Agency (USEPA) Construction Grants Program in the late 1970's and early 1980's. Since the early 80's several plants have completed modifications to meet water quality standards.

Several treatment plants have abandoned their facilities and connected via force main to the Green Bay Metropolitan Sewerage District Plant. Furthermore, phosphorus and ammonia nitrogen removal are now required in many of the recently issued Wisconsin Pollution Discharge Elimination System (WPDES) permits.

In addition, a number of un-sewered areas have completed facilities planning. To gain a broader perspective of the scope of sewerage planning efforts in Brown County, Map 5-1 has been developed. Map 5-1 shows planning areas for all POTW's and established sanitary districts within Brown County.

This chapter also provides a discussion of the wastewater collection and treatment facilities for present and projected 2015 sewerage areas.

Municipal Systems

Village of Denmark

In 1980, Denmark completed construction of a new rotating biological contactor (RBC) wastewater treatment plant for treating domestic and industrial wastewaters. This plant was upgraded in 1994 with the construction of a trickling filter pretreatment system, septate receiving facilities and increased sludge storage facilities. The Village's current WPDES permit requires the plant to remove phosphorus and ammonia nitrogen. However, the plant is not required to disinfect its discharge to Denmark Creek, a tributary of the Neshota River.

The plant is designed for average wastewater flow and loadings of 0.6 MGD, 2,665 pounds per day of BOD, and 1,970 pounds per day of suspended solids. In 1994, Denmark's population was 1,715 and wastewater flows and loadings averaged 0.39 MGD, 1,657 pounds per day of BOD, and 1,278 pounds per day of suspended solids. It is expected that the wastewater facilities will be capable of providing adequate wastewater treatment through the year 2012.

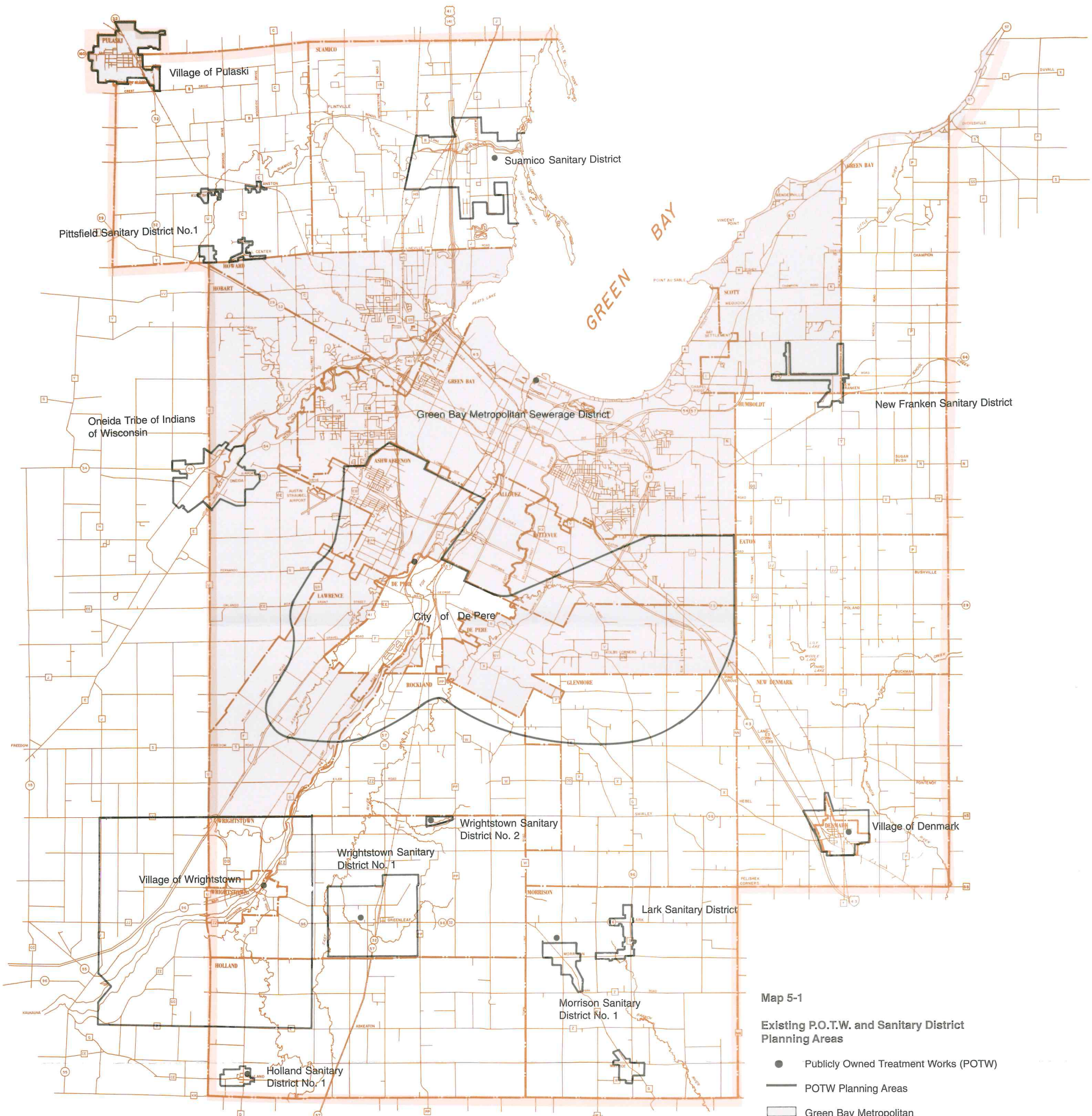
City of De Pere

The City of De Pere completed expansion of its treatment facility in 1980 to provide tertiary treatment, including ammonia nitrogen, and phosphorus removal. The facility is a two stage activated sludge plant designed to treat domestic and industrial wastewater. Effluent is discharged to the Fox River. The waste activated sludge is processed using dissolved air flotation thickeners and multi-plate pressure filters and is then incinerated. Residual ash is hauled to a landfill site for disposal. The plant is designed to treat an average flow of 14.2 mgd and loading of 41,000 pounds per day of BOD, 78,900 pounds per day of suspended solids, 2,629 pounds per day of ammonia nitrogen and 1,775 pounds per day of phosphorous. 1994 average monthly flows and loadings were 6 MGD, 23,800 pounds per day of BOD and 21,100 pounds per day of TSS. The 1995 population of the city is an estimated 18,397 persons. However, the existing service area for the treatment plant includes a major portion of the Village of Ashwaubenon and a portion of the Town of Ledgeview, Hobart, Lawrence and the unincorporated community of Oneida. The City of De Pere has agreed to provide wastewater treatment at its plant to areas within the GBMSD. The terms of the agreement call for GBMSD to determine which of the two plants (the City of De Pere plant or its own GBMSD plant) is to provide wastewater treatment for areas within GBMSD. The two wastewater authorities determine future sewer service extensions within their separate territories.

The City of De Pere treatment plant has experienced no effluent problems, and no major improvements are envisioned at the facility. The city has adopted an industrial pretreatment program, required under Section NR 211 of the Wisconsin Administrative Code. This program's purpose is to prevent the introduction of pollutants into the wastewater treatment plant that may interfere with plant operations or sludge disposal, prevent the introduction of pollutants that will pass through or are incompatible with treatment operations, and improve opportunities for recycling and reclamation of municipal and industrial wastewaters and sludges.

Map 5-1 shows the planning area for the City of De Pere treatment plant. The sewer system and treatment facility were designed for ultimate development of this planning area, and therefore have adequate capacity to meet the year 2015 projections. The De Pere wastewater treatment plant will be providing service for not only the City of De Pere but also parts of the Village of Ashwaubenon and the Towns of Ledgeview, Hobart, Lawrence, and Rockland. Therefore, population serviced by the De Pere plant may be in the neighborhood of 39,000 persons by the year 2015. See Table 5-1.

Wasteload allocations appear to have little if any affect on the operation or capital facilities at the City of De Pere treatment plant. Even under the most stringent flow and temperature conditions in the wasteload allocation scheme and based upon the 2015 flows and loadings, no modifications should be needed at the plant to meet its current effluent permit limits.



The preparation of this report was financed in part by a water quality management planning grant from the Wisconsin Department of Natural Resources as administered by the Brown County Planning Commission

1996

Map 5-1

Existing P.O.T.W. and Sanitary District Planning Areas

- Publicly Owned Treatment Works (POTW)
- POTW Planning Areas
- Green Bay Metropolitan Sewerage District (GBMSD)
- 1995 Sewage Plan Planning Area

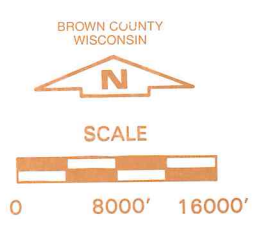


Table 5-1						
Estimated Population Tributary to City of De Pere Wastewater Treatment Plant						
Community	1995			2015		
	Sewered	Non-sewered	Total	Sewered	Non-sewered	Total
City of De Pere	18388	9	18388	22001	0	22001
Village of Ashwaubenon ¹	12625	0	12625	13214	0	13214
*Town of Ledgeview ² (Includes Town of Ledgeview Sanitary District's #2)	513	1294	1807	805	1480	2285
Town of Hobart ³ Sanitary District #2	342	0	342	392	0	392
*Town of Lawrence ⁴ (Includes Town of Lawrence Sanitary District #1)	108	1321	1429	304	1370	1674
Town of Rockland	0	1147	1147	113	1349	1462
Oneida Sewer Service Area ⁵	507	399	906	1956	0	1956
Total	32483	4170	36644	38785	4199	42984

1. Assumes 73% of residential development in Ashwaubenon will go to De Pere plant. 17,295 x 73%
2. 166 residential customers x 3.09 (pph) = 513
3. 105 residential customers x 3.26 (pph) = 342
4. 35 residential customers x 3.09 (pph) = 108
5. 169 residential customers x 3.00 (pph) = 507

* Assumes 80% of Town growth will occur in Town Sanitary Districts

Source: GBMSD Comprehensive Annual Financial Report, December 31, 1994
Brown County Planning Commission Estimates and Projections
Community and Town Sanitary District Records
Department of Administration (DOA) Estimates
Oneida Planning Department

Green Bay Metropolitan Sewerage District

GBMSD acts as a wastewater treatment wholesaler for an estimated service population of over 140,000 people. The existing serviced area includes the City of Green Bay, the Villages of Allouez, Ashwaubenon, and Pulaski. Portions of the Village of Howard, Towns of Hobart, Bellevue, Scott, Green Bay, Red River, Lawrence, and Ledgeview are included as well as a portion of the Oneida Reservation. At present, wastewater from part of the Village of Ashwaubenon and parts of the Towns of Ledgeview, Lawrence, Hobart, and the Oneida Reservation

is treated at the De Pere wastewater treatment plant. The GBMSD treatment facility accepts significant industrial processed wastes from within the serviced area, and has an industrial pretreatment program in place. 1995 wastewater flows average 27.7 mgd. 1995 average monthly loadings were 51,536 pounds per day BOD, 52,839 pounds per day TSS and 1,007 pounds per day phosphorous.

The facility is an activated sludge treatment plant treating domestic and industrial wastes. The treatment facility is designed to meet ammonia limits up to the year 2000 maximum month condition for an average flow of 49.2 mgd and a maximum daily flow of 96.6 mgd. The year 2000 maximum month loadings are 103,110 pounds per day of BOD and 89,460 pound per day for TSS. To meet year 2010 projected wastewater flow and loadings, aeration and final basin capacity must be expanded. GBMSD's projected year 2015 sewer population is approximately 170,000 persons. See Table 5-2.

As a result of facilities planning efforts, the GBMSD treatment facility completed several expansion projects by 1993. Process changes included the addition of two new clarifiers, two additional aeration basins, and an improved solids handling system. Other improvements included retrofitting many parts of the plant to accommodate new processes, such as improved ammonia removal (nitrification) and de-chlorination. To address the removal of more phosphorous, the district incorporated the biological nutrient removal process (BNR) as part of the plant's expansion and upgrade. The process is designed to enhance phosphorous removal by limiting chemical additions.

New septage-, sludge-, and grease-receiving sites were constructed and put into service in March of 1994. Septage wastes are routed directly to primary treatment and are no longer sent through plant return. Digester sludge from surrounding treatment plants is blended with Gravity Belt Thickener (GBT). Thickened sludge is then pumped to the de-watering process. Construction of a hydrogen peroxide system was recently completed as well. Hydrogen peroxide is utilized in the de-watering process for odor and hydrogen sulfide control.

GBMSD has investigated providing treatment services to un-sewered areas presently conducting or anticipating conducting facilities planning. Some of these areas include the Town of Union in Door County, expansion of the Oneida Sewer Service Area, Pittsfield Sanitary District #1, Suamico Sanitary District #1, and additional portions of the Towns of Hobart, Scott, Ledgeview, Rockland and Lawrence. Also, the Wisconsin DNR has requested that GBMSD provide information regarding service to the Villages of Luxemburg and Casco in Kewaunee County and the Town of Little Suamico in Oconto County. The information is requested to assist in planning efforts which consider regionalization. GBMSD also undertakes continual interceptor improvements to provide adequate capacity to handle the year 2015 flow projections.

Table 5-2						
Estimated Population Tributary to Green Bay Metropolitan Sewerage District Wastewater Treatment Plant						
Community	1995			2015		
	Sewered	Non-sewered	Total	Sewered	Non-sewered	Total
City of Green Bay ¹	100122	664	100786	116254	993	117247
Village of Allouez	14817	3	14820	14946	0	14946
Village of Ashwaubenon ²	4670	0	4670	4887	0	4887
Village of Howard ³	8410	3023	11433	12109	3218	15327
Town of Bellevue ⁴	6796	2650	9446	12165	2933	15098
Town of Hobart ⁵						
Sanitary District #1	1069	186	1255	2152	40	2192
New Franken						
Sanitary District ⁶	0	437	437	448	0	448
Town of Pittsfield						
Sanitary District #1	0	238	238	292	0	292
Town of Scott ⁷	1941	351	2292	2272	388	2660
Town of Green Bay ⁸						
(Dyckesville Sanitary District)	555	894	1449	890	978	1868
Town of Red River ⁹						
(Dyckesville Sanitary District)	591	842	1433	677	863	1540
Village of Pulaski	2532	2	2534	3333	0	3333
Total	141503	9290	150793	170425	9413	179838

1. Assumes 98% of city population growth will occur on public sewer.
2. Assumes 27 percent of residential population will go to GBMSD. Also assumes 100% of population growth will occur on public sewer.
3. 2920 residential customers x 2.88 pph - Assumes 95% of village growth will occur on public sewer.
4. 2517 residential customers x 2.70 pph - Assumes 95% of town growth will occur on public sewer.
5. 328 residential customers x 3.26 pph - Assumes 80% of population growth will occur in sanitary districts.
6. 143 residential customers x 3.05 pph - Assumes modest growth (179 residential customers x 2.50 pph)
7. Includes Scott Sanitary District No.1, Bayshore Sanitary District, and Royal Scot Sanitary District - Assumes 80% of population growth will occur in sanitary districts.
8. 192 residential customers x 2.89 pph - Assumes 80% of population growth will occur in sanitary districts.
9. 192 residential customers x 3.08 pph - Assumes 80% of population growth will occur in sanitary districts.

Sources: GBMSD Comprehensive Annual Financial Report, December 31, 1994

Brown County Planning Commission Estimates and Projections

Community and Sanitary District Records

DOA 1995 Estimates

Table 5-3
Estimated Flow for Publicly-owned Treatment Facilities
in Brown County

Treatment Facility	Year 1980		Year 1995		Year 2015		Treatment Plant Design Flow (MGD)
	Sewered Population ¹	Average Flow (MGD)	Sewered Population ²	Average Flow (MGD) ³	Sewered Population ²	Average Flow (MGD) ³	
Village of Denmark	1,475	0.22	1697	.39	1949	.45	0.6
City of De Pere	25,623	3.5	32,145	6.0	38,785	7.2	14.2
Green Bay Metropolitan Sewerage District	116,333	34.4	141,503	27.7	170,425	35.3	49.2
Town of Holland, Sanitary District No. 1	300	0.26	413	.22	413	.22	0.2
Morrison Sanitary District	0	0	400	.03	400	.03	0.57
Suamico Sanitary District	0	0	2,917	.22	3,925	.36	0.29
T. of Wrightstown Sanitary District No. 1 (Greenleaf)	520	0.03	535	.05	760	.05	0.13
T. of Wrightstown Sanitary District No. 2	20	<0.002	49	.004	60	.005	0.005
V. of Wrightstown	1,169	0.12	1424	.14	1866	.18	0.3
Total	145,440		181,083		218,583		

1. Based on 1980 Census of Population
2. Estimates and projections by Brown County Planning Commission Staff
3. Flow estimates are based upon existing sewer flows, water usage, population, and land use projections for each community.

Town of Holland Sanitary District No. 1

The Town of Holland Sanitary District #1 owns and operates an activated sludge facility followed by a three-cell aerated lagoon system followed by multi-media filtration. Effluent is discharged to an un-named tributary of Plum Creek. The plant is designed to treat a daily flow of .2 mgd, 4,100 per day of BOD, and 1,300 pounds per day of suspended solids. In 1993, the plant treated an average flow of .227 mgd and 1,618 lbs/day BOD. Wastewater from White Clover Dairy comprises about 95% of the hydraulic and organic loading.

In 1991, the WDNR informed the sanitary district that their program of applying liquid sludge to agricultural land needs to be upgraded to meet Section NR204, 110.26, and the Environmental Protection Agency (EPA) regulation 40 CRF.

Basically, the regulations required that a minimum of 180 days of sludge storage be provided to avoid sludge spreading on frozen ground.

In 1994, the sanitary district upgraded the facility and have met the sludge storage requirements identified by the WDNR.

Since most of the wastewater load for the sanitary district is generated by White Clover Dairy, industrial process activity will have a tremendous impact on the performance of the WWTP. Thus, the need for any future facilities planning or plant upgrades is a function of CMAR and permit compliance.

Suamico Sanitary District No. 1

The Suamico Sanitary District No. 1 completed construction of a collection system and treatment facility in 1981. The plant is an activated sludge facility designed and constructed to allow the addition of an additional treatment module to meet a 20 year design period. The effluent is discharged at the mouth of the Suamico River in the Bay of Green Bay. The 10 year design flows and loads for the Suamico Treatment Facility are .29 mgd, 552 pounds per day BOD, 650 pounds per day suspended solids, and 22 pound per day phosphorus. The peak design flow is .68 mgd.

Population growth within the Sanitary District since the treatment plant was constructed has caused its loading to approach design capacity. In addition, subsequent WDNR regulations require the treatment plant to have the capability to dechlorinate and remove phosphorus. The existing WWTP cannot meet the new disinfection and phosphorus removal requirements spelled out in the new permit. The revised WPDES permit requires that the following compliance schedule be satisfied:

- | | |
|---------------------------------|-----------------|
| ● Submit Facilities Plan | July, 1995 |
| ● Submit Plans & Specifications | September, 1996 |
| ● Begin necessary upgrading | January, 1997 |
| ● Complete Upgrade | May, 1998 |

The facilities plan was completed on schedule in July 1995. The plan recommended that the existing package plant is not suitable for expansion and should be replaced by a two-cell oxidation ditch. It further suggested that the existing package plant would serve as an aerated sludge holding tank.

To date, the facilities plan has not been approved by the WDNR because additional study may be required to further evaluate the cost effectiveness of connecting the existing system to the GBMSD.

Oneida Tribe of Indians

Until 1992, the Oneida Tribe of Indians of Wisconsin operated a wastewater treatment facility to serve residents and governmental buildings in the unincorporated

rated community of Oneida spanning both Brown and Outagamie Counties. The facility did not fall under the authority of the WDNR or its WPDES permits. However, the Oneida Wastewater treatment plant did have an Environmental Protection Agency (EPA) performance standard placed on it. During the 1980's though, the amount of flow at the facility was beyond the plant's capacity. Discharge from the treatment plant went to Duck Creek.

As a result of the Oneida facility being unable to regularly meet standard requirements, the Oneida Tribe pursued sewer service with the Green Bay Metropolitan Sewerage District (GBMSD). In addition, the Oneida Tribe began preparation of a facilities plan. The Tribe was granted designated management agency (DMA) status so it would be eligible to receive a facilities planning grant from the WDNR.

In 1992, new sanitary sewers were constructed to serve non-sewered areas. Sanitary sewage from these newly sewerred areas and the previous collection system is now transported by a lift station and forcemain to a GBMSD interceptor for treatment at the De Pere Wastewater Treatment Facility. In 1994, the Oneida Utility Commission (OUC) and GBMSD agreed to an amendment to the "Agreement for Wastewater Treatment Services." The sewer service area was expanded and the OUC agreed to undertake an evaluation of other wastewater management treatment options.

Wastewater treatment for a portion of Oneida, including some homes on Ranch Road and the Oneida Tribe Public Works building, is provided by stabilization lagoon facilities with seasonal surface discharge to Duck Creek. Individual septic tanks that discharge effluent to a soil absorption system are also found. Wastewater management throughout the rest of the reservation consists of on-site disposal systems using conventional or mound systems, and holding tanks.

Continued use of the existing wastewater management system is limited. Current allocation of wastewater to serve a particular area of Oneida is 1.0 cubic feet per second (cfs). Therefore, wastewater flow to GBMSD cannot exceed 1.0 cfs. According to projected development for the Oneida Sewer Service Area by the Oneida Planning Department in December, 1994, wastewater flow will exceed 1 cfs in the year 1998.

Currently, there are reports of problems and failures of on-site sewage systems due to site and soil limitations. Although, there is a need to upgrade or replace existing on-site systems, the use of on-site systems for new development is limited.

Due to on-site sewage problems and concern with future flow increasing to the GBMSD, it is important for the Oneida Tribe to address their current sewer limitations and future development. Alternatives available to the Oneida Tribe are discussed under the Facilities Planning Section of this report.

Village of Pulaski

In 1991, the Village of Pulaski was required to initiate facilities planning for wastewater treatment by the Wisconsin Department of Natural Resources (WDNR). The primary reason for initiating facilities planning were exceedences of the WPDES permit limits in 1989, 1990, and 1991 and a score requiring WDNR action on the Village 1989 and 1990 Compliance Maintenance Annual Report (CMAR).

The Village determined that upgrading the plant to meet the effluent limits was not cost-effective and installed a pipeline system to the Green Bay Metropolitan Sewerage District (GBMSD) treatment plant. In June 1994 the system was complete and the village began sending wastewater to GBMSD. The wastewater also receives pretreatment in the upgraded aeration lagoon system located adjacent to the old wastewater treatment plant. The remaining system consists of a new lift station at the location of the old treatment plant, which pumps sewage into a 16-inch diameter forcemain discharging into the 30 inch gravity "Bayview" Interceptor sewer in the Village of Howard. Pipeline capacity is 5.0 cfs, and lagoon pumping system is 4.0 cfs which should supply adequate capacity through the year 2015. The Village was officially annexed to the Green Bay Metropolitan Sewerage District on April 27, 1992.

Royal Scot Sanitary District

In 1990, the Royal Scot Sanitary District was required to initiate facilities planning for wastewater treatment by the WDNR. The primary reasons for initiating facilities planning were exceedences of WPDES permit limits in 1987, 1988, 1989 and 1990 and a score requiring WDNR action on the districts' 1989 and 1990 CMAR's.

The sanitary district determined that upgrading the plant to meet effluent limits was not cost-effective and in 1992 installed a forcemain pipeline system to the Green Bay Metropolitan Sewerage District for treatment. The system consists of an upgraded lift station located on Caledonia Drive. The forcemain discharges into a flow measurement and sampling manhole 300 feet east of Bay Settlement Road. From this location sewage is conveyed by a 12 inch diameter gravity sewer to the GBMSD Plant. The existing forcemain system is capable of accommodating projected flow from the New Franken Sanitary District. The Sanitary District has purchased 1.1 cfs from the GBMSD interceptor sufficient to accommodate this districts needs beyond the 20 year planning period.

Wrightstown Sanitary District No. 1 (Greenleaf)

The Wrightstown Sanitary District No. 1 serves the unincorporated community of Greenleaf. An existing wastewater treatment plant was abandoned and a new facility was constructed and started up in early 1995. The wastewater treatment plant serves an existing estimated population of 550 which is projected to increase to approximately 760 by the year 2015. The wastewater facility is an activated

sludge type plant (oxidation ditch form of activated sludge wastewater treatment with aerobic digestion of solids). A sludge holding tank provides 180 days of storage capacity during the winter months. Sludge from the holding tank is disposed onto surrounding agricultural land. The effluent is discharged to a drainage ditch that is tributary to the East River. The new plant was designed to serve average wastewater flows and loads of .13 MGD and 150 lbs/day of BOD. Actual flows in 1994 averaged .052 MGD. In 1995, the average wastewater flow during the first few months of startup was .044 mpd. The wastewater facilities are capable of providing adequate treatment through the year 2015 barring any new requirements cited in the reissuance of the districts WPDES permit.

Wrightstown Sanitary District No. 2 (Birch Creek)

Wrightstown Sanitary District No. 2 consists of a 110-acre housing development in the northeast portion of the town. There are currently 19 lots served by the District which contain 15 housing units. The population serviced by the District is an estimated 49 individuals. The wastewater treatment facility is a two cell stabilization lagoon system which is operated as a fill and draw. Due to the addition of aerators, the design flow and load is 10,000 gallons per day and 17.00 pounds per day BOD. Average flows in 1995 were 4,200 gallons per day or .004 mgd. BOD loadings averaged 6 lbs/day. The District plans to replace the air supply equipment with a new centrifugal blower in 1996 which will enhance the treatment process. Given the Districts' recent improvements, the plant should be capable of meeting permit requirements out to the year 2015, unless substantial development takes place.

Village of Wrightstown

The Village of Wrightstown completed construction of a new wastewater treatment plant in 1980. The plant is an activated sludge wastewater treatment facility designed to treat .30 mgd, 720 pounds per day BOD, and 656 pounds per day of suspended solids. Treated wastewater is discharged to the Fox River.

In 1994, average flows and loads were .14 mgd and 213 lbs/day of BOD; disinfection is required. The Village of Wrightstown wastewater treatment plant is a well-operated and maintained facility which has met its effluent limits. Barring any significant increases in loadings, the Village plant has adequate capacity available to meet the wastewater treatment needs through the year 2015.

Morrison Sanitary District No. 1

The Morrison Sanitary District No. 1 was created to address onsite system deficiencies within the unincorporated communities of Morrison and Wayside. On-site system restrictions included high groundwater conditions, shallow bedrock conditions, and small lot size for potential replacement systems.

After considerable study, the Morrison Sanitary District constructed a conventional gravity sewer collection system for the densely populated areas of Morrison

and Wayside and a wastewater treatment facility in 1994 . The WWTP is an activated sludge type plant (domed covered oxidation ditch system with aerobic sludge digestion). A sludge holding tank is used to store waste activated sludge during the winter months. Sludge is disposed on surrounding agricultural land. The WWTP discharges effluent to an unnamed tributary of the Branch River.

The plant is designed to handle year 2010 flows and loadings of .057 MGD, 96 lbs./d of BOD , and 105 lbs/d of TSS. The 1994 estimated population for the District was 400 persons. The population over the 20 year design period is projected to reach 625 persons by the year 2015. The 1995 average wastewater flows and loads were 30,000 gpd and 50 lbs./day of BOD . Although the Morrison Sanitary District WWTP is a newer facility, several problems were experienced as documented in the Districts 1994 Compliance Maintenance Annual Report (CMAR) to the WDNR. A majority of the points accumulated in the CMAR were due to poor effluent quality which resulted from a number of operational problems and receipt of high strength septage. Early 1995 data showed continued problems with exceedence of BOD and TSS permit limits.

At the request of the district, the WDNR provided operational assistance and identified a number of problems the implementation of which appears to have brought the plant into compliance. Continual close monitoring of the plants performance is essential especially if significant additional growth occurs within the district. If the concerns have been abated, the plant should be capable of meeting the districts needs beyond the 20 year planning period.

Facility Planning

Oneida Tribe of Indians of Wisconsin

The Oneida Tribe of Indians of Wisconsin 1838 Treaty Boundary area is located in Brown and Outagamie Counties. The area can be characterized primarily as rolling farmland, interspersed woodland, with scattered development.

Since 1974, the tribe has embarked on numerous facility planning efforts targeted towards 3 specific areas within the reservation.

Initial facilities planning targeted the Site I area, which includes the established densely populated "village" area.

As a result of facility planning efforts, new sanitary sewers were constructed to serve sewerred developments within the Site I area. Sewage from these newly sewerred areas and the existing collection system in Site I is now transported by a lift station and forcemain to the Dutchman Creek interceptor owned by the Green Bay Metropolitan Sewerage District for treatment at the De Pere Wastewater Treatment Facility.

In 1994, the Oneida Utility Commission (OUC) executed an amendment to the original "Agreement for Wastewater Treatment Services" with GBMSD. The agreement provides for a peak discharge of 1.0 cfs within the interceptor to accommodate the sewer service area over a 20 year planning period. It also allowed for expansion of the sewer service area. In exchange, the OUC agreed to undertake a study of long term options regarding how flows above 1 cfs from the sewer service area could be controlled and managed.

Wastewater treatment for the Site II Development, including the Green Earth trailer park, homes on Ranch Road and CTH "H", and the Oneida Tribe Public Works Building, is provided by stabilization lagoon facilities with seasonal surface discharge to Duck Creek. The existing Health Center Complex/Anna John Nursing Home and Redstone Elderly Housing Facility, at Site III (CTH "E" and "EE"), are served by individual septic tanks that discharge effluent to a common soil absorption system.

Wastewater management throughout the remainder of the Reservation consists of on-site disposal systems using conventional or pressurized soil absorption systems or holding tanks.

Continued use of the existing wastewater management system is limited. The current allocation for the Site I area is 1 cubic foot per second (cfs). Therefore, wastewater flows conveyed to the GBMSD system cannot exceed 1 cfs.

A wastewater treatment lagoon facility, such as the facility that serves Site II, does not provide adequate treatment to meet discharge limits that are required by the United States Environmental Protection Agency (EPA). This 2-cell stabilization lagoon, discharges treated effluent to an intermittent stream that flows into Fish Creek and eventually to Duck Creek. The Site II Lagoon system was designed to provide 180 days of storage. Due to excessive influent flows to the lagoons, cell 1 overflows the berms. Therefore, it is likely that an alternative treatment method will be needed for Site II in the near future.

In 1993, the Oneida Tribe of Wisconsin initiated Facilities Planning to address documented problem areas within the Oneida study area. The plan included the Site II and Site III areas and recommended the construction of a gravity flow system over upgrading existing failed on-site systems. The report noted site and soil limitations causing on-site system problems or failures throughout the Reservation. Extensive areas are not suitable for soil absorption systems, due to soil limitations and high groundwater levels. There is a need to upgrade or replace failing on-site systems and limit the use of on-site systems in the identified problem areas.

A number of options are available to the OUC to address reservation wastewater disposal needs. Regional options include developing a interconnected sewerage system for sites I, II and III which would discharge to either the GBMSD, Freedom Sanitary District or a Tribally owned and managed treatment facility.

Other sewerage options the Oneida Tribe is currently considering includes Cluster type systems to accommodate developments of approximately 20 homes, upgrades of isolated individual on-site systems and treatment systems designed to accommodate neighborhood developments of approximately 200 homes. Numerous technologies are available under each wastewater management options and all, if properly located, designed and maintained, could provide long term wastewater treatment for both existing development and potential growth. (See Appendix C).

The Oneida Tribe has taken the position that further research and evaluation will dictate which systems are appropriate for particular situations.

Based on projections from the Oneida Planning Department, it is likely the 1 cfs capacity allocated to the tribe in the Dutchman Creek interceptor will be reached around 1998. Conveyance system improvements could increase capacity to 1.8 cfs, however, given the anticipated growth expected within the reservation this additional capacity could be exhausted shortly after the turn of the century. It is anticipated that the development projects within the reservation will be very aggressive and further accelerate the need to provide adequate facility upgrading or replacement.

Based on the above, it appears paramount that wastewater management needs must be considered early in the planning development process. A wastewater management option must be pursued immediately to address the concerns in the Site II and Site III development areas.

Lark Sanitary District

The Lark Sanitary District is located in the Town of Morrison, about 13 miles south of the City of Green Bay. It includes mostly single-family residential buildings, with a few small commercial land uses and a church.

The majority of existing buildings within the Sanitary District are served by privately owned conventional septic systems often constructed in areas of high groundwater or shallow bedrock. Due to these conditions, many of the systems pose a potential public health hazard through the contamination of groundwater and ponding of septic tank effluent, and through the direct discharge of wastewater to the ground surface. The area has been identified in past Sewage Plan Updates as a potential problem area.

A large portion of existing private wastewater systems are in noncompliance with current standards for on-site systems. In most cases, the only alternative for upgrading existing on-site systems is the installation of an individual holding tank.

In December 1993, the Lark Sanitary District completed a facilities plan to analyze potential alternatives to correct on-site system problems. The facilities plan recommended that a conventional gravity sewer system be constructed that would discharge to the Morrison Sanitary District No. 1 treatment facility. Wastewater would flow from the community of Lark south along CTH "G", and

then west along Mill Road to collect in a lift station. The wastewater would then be pumped in a 4 inch diameter forcemain west along Mill Road to the Morrison Sanitary District collection system for eventual treatment.

After review by both the Brown County Planning Commission and the Wisconsin Department of Natural Resources Bureau of Wastewater Management, the proposed alternative was not determined to be a cost-effective solution and subsequently the system was not constructed. Recently, however, the District has made efforts towards addressing the concerns by the County and State over cost-effectiveness and may submit revised plans.

Given the intense competition for grant funding, it appears the District will face tough economic decisions as to what corrective action is best. Regardless of the alternative chosen for implementation, corrective action should be pursued to address failing systems within the District.

New Franken Sanitary District

The New Franken Sanitary District is located in the Town of Scott, the Town of Humboldt, and the Town of Green Bay in Brown County. The District lies about three miles northeast of the City of Green Bay. The District includes mostly single-family residential buildings and a few commercial land uses.

The majority of existing sanitary district buildings are served by privately owned conventional septic systems often constructed in areas of seasonal high groundwater. Due to these conditions, many of the systems pose a potential public health hazard through the contamination of groundwater by the ponding of septic tank effluent and the direct discharge of wastewater to the ground surface. Most replacement systems within the sanitary district have been holding tanks. At a few locations where groundwater was within acceptable limits and sufficient area was available, mound systems have been installed as replacement systems. The New Franken Sanitary District area was identified in previous Sewage Plans as a potential problem area.

Many property owners in the district will be required by the Brown County Zoning Office to upgrade to individual holding tank systems or mound systems in the near future if a public sewer system is not made available. The close proximity of sewer service provided by the Green Bay Metropolitan Sewerage District (GBMSD) via the Royal Scot Sanitary District transmission system provides a good reason to explore the feasibility of a public sewer system for the New Franken Sanitary District.

In October 1995, a facilities plan was developed to analyze several wastewater management alternatives.

Based on cost and non-cost factors, the recommended plan for the New Franken Sanitary District is a conventional gravity sewer system. This alternative involves extending 8 inch gravity sewer to all properties with buildings within the district.

Wastewater for the New Franken Sanitary District would be conveyed through the Royal Scot Sanitary District forcemain to the GBMSD interceptor system for ultimate treatment at the GBMSD plant. Other municipal wastewater treatment options such as a separate WWTP were not considered cost effective.

The estimated system design flows for the year 2015 are .54 mgd, 155 pounds per day BOD, 194 TSS (total suspended solids) and 11.7 pounds per day of phosphorus. The projected district 2015 population is 420 persons.

The facilities plan is currently under review by WDNR. The District's intent is to begin construction in 1996 if favorable financing can be obtained.

The Village of Luxemburg and the Village of Casco are evaluating the potential of conveying wastewater to the GBMSD. Inter-municipal agreements are required if wastewater from these areas is to be accommodated in the New Franken District.

Pittsfield Sanitary District

The Pittsfield Sanitary District No. 1 is located in the Town of Pittsfield, about eight miles northwest of the City of Green Bay. It includes mostly single-family residential buildings, a few small commercial areas, one industry, a school, and a church.

The majority of existing buildings are served by privately-owned on-site conventional septic systems often constructed in areas of potentially high groundwater. These systems pose a potential public health hazard through the contamination of groundwater and ponding of septic tank effluent, and through the direct discharge of wastewater to the ground surface.

In many cases, the only alternate for upgrading existing on-site systems is the installation of an individual holding tank.

Many property owners in the district would be required by the Brown County Zoning Administrator's Office to upgrade to holding tanks or mound systems in the near future if a public system is not made available. Due to the close proximity of sewer service provided by the Green Bay Metropolitan Sewerage District (GBMSD), the feasibility of a public sewer system for the Pittsfield Sanitary District No. 1 warrants analysis.

A facilities plan was developed in 1994 to analyze several wastewater management alternatives.

Based on cost and non cost factors, the recommended plan for the Pittsfield Sanitary District is a conventional gravity sewer. This alternative involves extending an 8-inch diameter gravity sewer to all properties with buildings.

The area in Mill Center would be serviced entirely by an 8-inch diameter gravity sewer connected directly to the Bayview Interceptor located in the Village of

Howard. The area near Lannoye School would be serviced by 8 inch diameter gravity sewer draining into a lift station which would pump into a 4 inch diameter force main discharging into the gravity system in Mill Center.

Kunesh and Anston would be serviced entirely by 8 inch diameter gravity sewers draining into a lift station in each community which would pump wastewater into 4 inch diameter force mains directly connected into the existing Village of Pulaski 16 inch diameter force main.

The estimated system design flows and loadings for the year 2015 are .36 MGD, 114 pounds per day BOD, 143 pounds per day TSS, and 8.6 pounds per day phosphorus. The estimated district population is 292.

Although the District's facilities plan with the recommended alternative was approved by the WDNR, the District was unsuccessful in securing Community Development Block Grant funds to pay for the installation. Hence, the district has not installed any infrastructure to date.

Chapter 6

Year 2015 Sanitary Sewer Service Areas

Introduction

As previously noted, the Wisconsin Department of Natural Resources is required to undertake, or to designate another public agency to undertake, sanitary sewer service area planning within designated portions of the state and for all communities with a population greater than 10,000 persons. Such sewer service area planning has two main objectives:

- To identify sewer service areas, or those areas tributary to a publicly-owned sewage treatment plant to which public sanitary sewer service could be provided to within a 20-year time-frame; and
- To identify environmentally sensitive areas, or those lands located within a sewer service area within which public sanitary sewer service and associated development should not be allowed.

In regard to this federal and state mandate, it can be noted that the entire Brown County area has been so designated, and that the public agency responsible for such sewer service area planning within the county is the Brown County Planning Commission. To meet its responsibilities in this matter, the Planning Commission had prepared county sewage plans in 1972, 1982, and 1987 which identified the sewer service areas and environmentally sensitive areas within the county. However, the Wisconsin Department of Natural Resources and the Brown County Planning Commission both recognize that the conditions and factors upon which such plans are based can and do change over time, and therefore recommend that these plans be reviewed and, if necessary, revised every five to ten years. These agencies also both recognize the importance of local input into this planning process and recommend that any revisions to the plan properly reflect local, as well as areawide, planning and development objectives. By adhering to such a process, it is believed that conflicts regarding public sanitary sewer extensions can be minimized and that the development of the county can proceed in a smooth and efficient manner. And lastly, it must be noted that Wisconsin Administrative Codes require that all public and private sewer extensions be in conformance with the adopted sewer service area plan.

Thus, the Brown County Planning Commission has undertaken this effort to revise the county sewage plan to extend the planning horizon of this plan to the year 2015, to reflect recent state, county and local planning and environmental initiatives, and to incorporate local and regional planning and development objectives.

Sewer Service Area Methodology

Projections for future sewer service are based upon a number of factors. These factors include population projections, collection system and treatment plant capacities, development trends, County and local land use plans, zoning districts, household size, projected employment, and the location of environmentally sensitive areas. All these factors are considered when selecting the areas to be served by sanitary sewers. Land needs are projected for residential, as well as commercial and industrial (non-residential), uses.

In defining the year 2015 Sewer Service Areas for Brown County, the following factors were used:

1. Delineation of Existing Sewered Areas. Using information provided by the municipalities and sanitary districts, the areas presently served with sanitary sewers were identified. 1990 air photos, in conjunction with field inventories, were used to delineate developed areas served by sewer as of July, 1994. These areas were originally mapped on air photos at a scale of 1 inch = 200 feet. This information was then digitized into a large digital base map of Brown County. Geographic Information System (GIS) software packages (ArcCAD and ArcVIEW) were used to generate the final SSA maps. The undeveloped areas within the Sewer Service Area were then plotted and acreages calculated.
2. Development Trends. During meetings with representatives from local governments, areas which were expected to develop were identified. The types of development anticipated to occur were also identified. These trends were reviewed in light of the delineation of sewer service areas and the environmentally sensitive areas.
3. Conformance with County and Local Comprehensive Plans. Local comprehensive plans were reviewed to determine the proposed land use within sewer service areas. Local zoning ordinances were also consulted but were not used exclusively as a determinant for inclusion into the Sewer Service Area. In addition, *Brown County's Year 2020 Land Use and Transportation Plan* was reviewed and consideration was given for lands specified for development. Lands not identified as future growth areas by either the local comprehensive plans or *Brown County's Year 2020 Land Use and Transportation Plan* were not considered for inclusion into the Sewer Service Area.
4. Demographics. The Brown County Planning Commission (BCPC) population projections for Brown County's minor civil divisions were reviewed and allocated to sewered and unsewered categories where needed. For Town Sanitary Districts, where recent facilities plans have been developed,

Table 6-1
Brown County Residential Sewer Area Calculations
1990-2015

Municipality	Allocation	Persons/ Household	Vacancy Rate (%)	Dwelling Units/Acre	Market Factor%	Road Factor%	Gross Acres Needed
Allouez	515	2.60	0.03	2.2	0.25	0.25	147
Ashwaubenon	1725	2.46	0.03	2.2	0.25	0.25	515
Bellevue S.D. #1	7179	2.66	0.03	2.2	0.25	0.25	1975
Denmark	337	2.43	0.03	2.2	0.5	0.25	124
DePere	5407	2.48	0.03	2.2	0.25	0.25	1598
Dyckesville S.D.							
T. Green Bay	461	2.60	0.03	2.2	0.5	0.25	158
Dyckesville S.D.							
T. Red River	106	2.69	0.03	2.2	0.5	0.25	38
Green Bay C.	20365	2.33	0.03	2.2	0.25	0.25	6397
Hobart S.D. #1	1426	2.83	0.03	2.2	0.25	0.25	372
Hobart S.D. #2	196	2.83	0.03	2.2	0.25	0.25	54
Holland S.D. #1	148	2.87	0.03	2.2	1	0.25	63
Howard	5180	2.60	0.03	2.2	0.25	0.25	1460
Lawrence S.D. #1	277	2.84	0.03	2.2	0.25	0.25	73
Ledgeview S.D. #1&2	574	2.78	0.03	2.2	0.25	0.25	154
Morrison S.D. #1	97	2.71	0.03	2.2	1	0.25	43
New Franken S.D.#1	11	2.67	0.03	2.2	0.5	0.25	8
Pittsfield S.D. 1	54	2.73	0.03	2.2	1	0.25	25
Pulaski	1133	2.45	0.03	2.2	0.5	0.25	408
Rockland	113	2.75	0.03	2.2	0.25	0.25	32
Scott	493	2.46	0.03	2.2	0.25	0.25	148
Scott S.D. #1							
Bayshore S.D.							
Royal Scot S.D.							
Suamico S.D. #1	2386	2.68	0.03	2.2	0.5	0.25	784
Wrightstown S.D. #1	230	2.78	0.03	2.2	0.5	0.25	74
Wrightstown S.D. #2	11	2.78	0.03	2.2	1	0.25	8
Wrightstown V.	604	2.64	0.03	2.2	0.5	0.25	203
Total	49028						14861

population allocations did consider the population projections listed in the report. Future household sizes for each community were determined by projections made as part of the *Brown County's Year 2020 Land Use and Transportation Plan*. Thus, for estimating the number of new dwelling units required to house the projected population increases between 1990 and 2015, average household sizes between 2.33 and 2.84 were assumed. Once the number of projected dwelling units was known, a universal 2.2 dwelling unit per acre standard was applied to determine land area needs for residential development. The use of a 2.2 dwelling-unit-per-acre figure was based on average lot sizes created between 1988 and 1993 which were served by public sewer. Projected residential land area totals per municipality and/or Town Sanitary District are shown on Table 6-1.

Table 6-2
Brown County Commercial & Industrial Sewer Service Area Calculations
1990-2015

Municipality	1990 Population	2015 Population	Population Growth	Percent Metro Area	Allocation Population	Gross Acres Needed
Metro Area						
Allouez	14431	14946	515	0.07	697	70
Ashwaubenon	16376	18101	1725	0.09	2010	201
Bellevue	7541	15098	7557	0.07	7792	779
De Pere	16594	22001	5407	0.11	5722	572
Green Bay	96466	117247	20781	0.58	22423	2242
Howard	9874	15327	5453	0.08	5717	572
Subtotal	161282	202720	41438	1.00	44367	
Non-sewered			2923			
Total			44361			4436
Outlying						
Denmark	1612	1949	337		337	34
Green Bay	1292	1868	576		576	58
Hobart	4284	6312	2028		2028	203
Holland	1237	1237	0		0	0
Lawrence	1328	1674	346		346	35
Ledgeview	1568	2285	717		717	72
Morrison	1493	1445	0		0	0
Pittsfield	2165	2514	349		349	35
Pulaski	2200	3333	1133		1133	114
Red River	1407	1540	133		133	14
Rockland	974	1462	488		488	49
Scott	2044	2660	616		616	62
Suamico	5214	8897	3683		3683	369
Wrightstown T.	1750	2188	438		438	44
Wrightstown V.	1262	1866	604		604	61
Total	29830	41230	11448		11448	1150
Grand Total	191112	243950	55809		55809	5586

5. Employment. To determine commercial and industrial local needs, the projected population growth of the metropolitan area was multiplied by each metropolitan community's composition percentage. This figure was then multiplied by each community's 1990 labor force participation rate and divided by an employment density of 10 employees per acre. The resultant figure was added to the original population growth figure to determine the allocated population. The allocated population total was divided by the employment density of 10 employees per acre to determine gross acres needed.

For sewerred areas outside the metropolitan area where detailed employment data is lacking, the total projected population increase was divided

by 10 employees per acre to generate the number of gross acres needed. Projected land area totals for industrial and commercial use are shown on Table 6-2.

6. Facilities Plans. Projected service areas for recently proposed facilities plans were also reviewed. If it appeared likely that wastewater treatment and/or collection facilities would be constructed over the next several years for unsewered areas, sewer service area boundaries were delineated. In some cases, if facilities plan data was more recent than County or state projections, the facilities plan data was used.

2015 Sewer Service Area Delineation

Map 6-1 depicts the delineated sewer service areas (SSA) for Brown County for the year 2015. The lines shown on the map represent the outer extent of the projected sewer service area. Environmentally Sensitive Areas noted on Map 7-1 are not available for sewer service development. Location of an area within the 2015 SSA does not necessarily mean that sewer service is immediately available, that is the decision of the local governing unit. Areas presently underdeveloped which are adjacent to a wastewater collection system should be developed prior to areas requiring extension of sewers. The year 2015 SSA line is a tool to implement the extension of municipal sanitary sewers, private interceptor sewers, and building sewers while aiding in the protection of environmentally sensitive areas.

In general, Brown County and local municipalities should encourage new development to proceed outward from the existing development core that is served by wastewater collection and treatment facilities. Existing collection facilities which have excess capacity should be used prior to the development of new collection facilities. Undeveloped areas adjacent to sewer service lands should be developed prior to more distant lands. Undeveloped areas which required the extension of major collection facilities (e.g., interceptors, river crossings, etc.) should be the last to develop.

When developing the sewer service area lines, environmental protection and cost-effective provision of urban services were key considerations for providing compact, easily-served growth. Those undeveloped areas immediately adjacent to existing sewer service development were shown to develop first. As the distance from the developed area increased, the priority for new growth decreased. The delineated sewer service area represents the area that should be sufficient to accommodate the projected normal growth, with some margin for allowing market conditions to operate. Unforeseen types and amounts of development are covered under the amendment section.

The year 2015 lines on Map 6-1 are drawn as near to scale as possible. Generally, the sewer service area lines are drawn to follow quarter section lines, property ownership lines, the centerline of streams and roads, or a one-lot depth (250') on the outer side of roads. The Year 2015 Sewer Service areas, in addition to

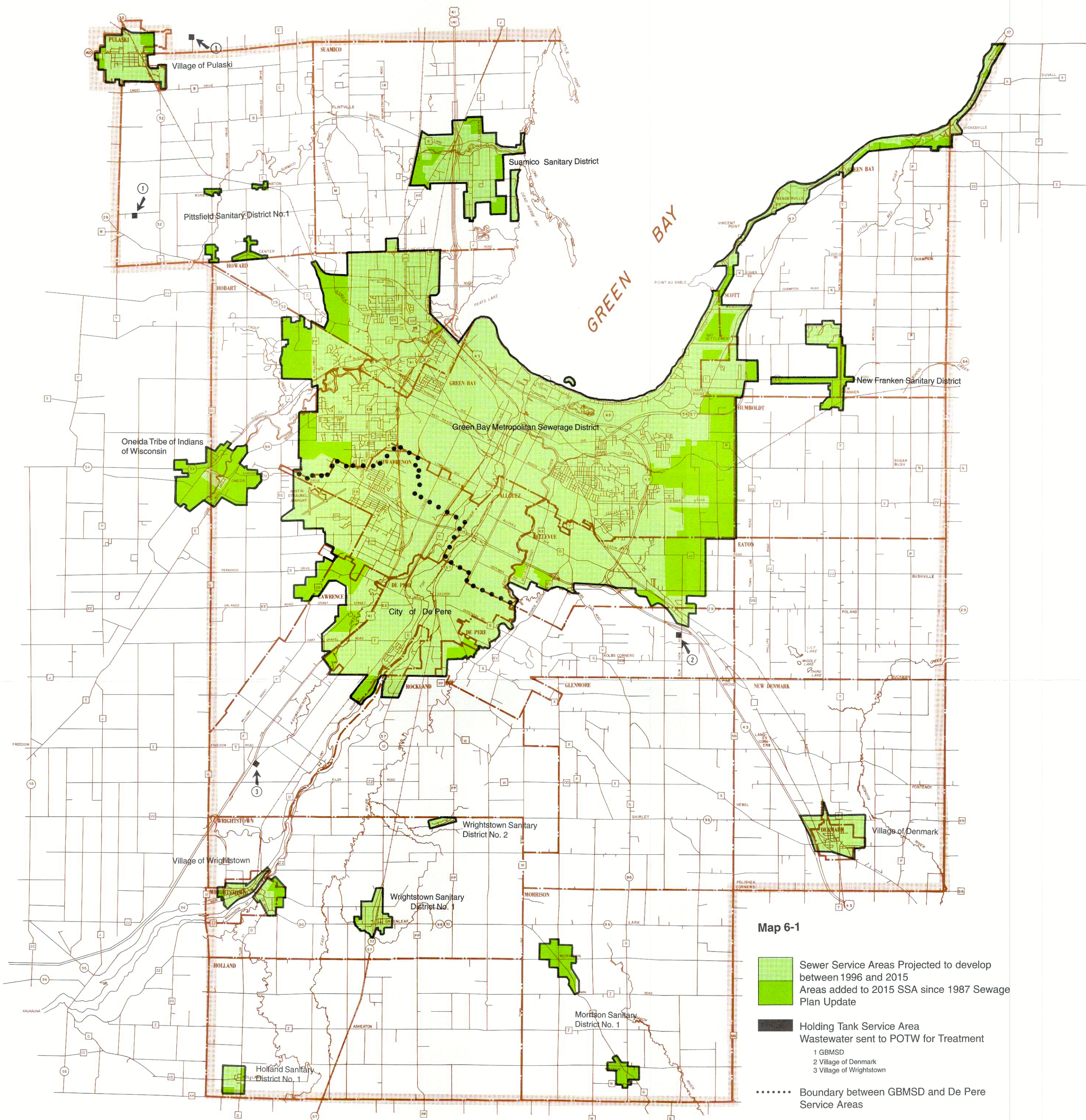
being delineated on Map 6-1, are also delineated on individual community and town sanitary district maps at various scales housed within the BCPC office. While sewer development is precluded in environmentally sensitive areas, crossing ESA's is permitted (although not encouraged) with appropriate care exercised. When a sewer crosses an environmentally sensitive area, measures should be taken to protect the corridor and return it as much as possible to pre-disturbed conditions. ESA's disturbed as a result of extending sewers shall follow the guidelines of a BCPC-approved restoration plan.

Requests for development within the Sewer Service Area should be reviewed for conformance with the goals, objectives, and policies contained in Chapter 4 of this plan. In addition, conformance with the recommendations found within the *Brown County Year 2020 Land Use and Transportation Plan*, as well as local comprehensive plans, should be evaluated.

Finally, while this plan delineates the sewer service areas of Brown County, it is understood that such areas may change over time for a variety of reasons. Thus, to accommodate reasonable and justifiable changes, this plan identifies procedures and criteria to be followed in addressing such changes. To facilitate the timely consideration of proposed changes, a separate Amendment Application Manual has been prepared to address both "major" and "minor" sewer service area revisions. A summary of this process is set forth in Chapter 9.

Recommendations

1. Encourage land development to proceed outward from the existing development core.
2. Encourage the use of the existing collection and treatment facilities which have unused, unallocated capacity prior to the extension of new collection and treatment facilities.
3. For known and potential on-site problem areas within the County, assure that any facilities planning studies investigate the appropriateness of innovative on-site systems as well as the more traditional, off-site collection and treatment facilities.
4. Utilize recent on-site system development activity within each community as a criteria to determine future sewer service area acreage allocations.



Year 2015 Sewer Service Areas Brown County Wisconsin

Brown County Planning Commission
Revised August 6, 1997

Note: Sewer Service Area lines portray areas within which sanitary sewer service may logically and economically be extended sometime within the planning period. Except as noted in the text, inclusion in the sewer service areas to a lot depth on the outer side of the lines to a maximum of 250 feet may be permitted based on the sole review and approval of the Brown County Planning Commission.

Preparation was financed in part by a Water Quality Management Planning grant from the Department of Natural Resources as administered by the Brown County Planning Commission.

Note: Designated Environmentally Sensitive Areas (ESA's) per map 5-2 are unavailable for sewer development.



SCALE



0 8000' 16000'

Chapter 7

Environmentally Sensitive Areas

Introduction

Brown County has been blessed with many scenic, unique and sensitive natural resource areas. Some examples are the Long Tail Point islands and coastal wetlands such as Point au Sable and Peters Marsh; the Niagara Escarpment, and particularly the associated Fonferek, Kittel, Rock and Wequiock Falls areas; the Big Scott Woods; and the Neshota River Valley. Typical natural resource features include: rivers and streams and their associated shorelands and floodlands, wetlands, woodlands, prairies, wildlife habitat areas, wet, poorly-drained and organic soils, and steep slopes. The presence and quality of these natural resource features in Brown County plays a pivotal role in the quality of life of county residents.

The benefits derived from natural resource features can also contribute to the health and safety of the county. Such benefits can include:

- Recharge of groundwater supplies, the source of drinking water for many people in Brown County.
- Maintenance of surface water and groundwater quality, which promotes improved drinking water supplies and recreational experiences.
- Attenuation of flood flows and stages, which decreases the risk of flood damage to property owners.
- Maintenance of base flows of streams and watercourses, which is important to the continued well-being of aquatic ecosystems and associated wildlife habitat.
- Reduction of soil erosion, which is vital for the continued high productivity of the County's agricultural lands.
- Abatement of air pollution, which results in health benefits for county residents, as well as for vegetation and wildlife.
- Abatement of noise pollution, with use of such features as a filter or buffer between adjacent and potentially conflicting land uses.
- Favorable modification of climate, which can result in moderation of temperature extremes resulting in less stress on vegetation and potential building heating and cooling cost savings.
- Facilitation of the movement of wildlife and provision of game and

non-game wildlife habitat, which improves food, nesting and cover opportunities.

- Facilitation of the dispersal of plant seeds, which promotes continued biological diversity and healthy ecosystems.
- Protection of plant and animal diversity, which promotes healthy and thriving ecosystems able to survive change and stress.
- Protection of rare, threatened, and endangered species, which contributes towards preservation of our natural heritage.

Because of the vital functions performed by these natural resource features, the intrusion of urban development into these areas is inappropriate and should be discouraged. The incompatibility of urban development within these natural resource features can also be evidenced by the widespread, serious, and costly problems which are often encountered when development occurs within these areas. Examples of such problems include: failing foundations of pavements and structures, wet basements, excessive operation of sump pumps, excessive clear-water infiltration into sanitary sewer systems, and poor drainage.

In addition, the destruction or deterioration of natural resource features may lead to a chain reaction of further environmental deterioration and destruction. For example:

- The destruction of ground cover may result in soil erosion, stream siltation, more rapid and higher volumes of stormwater runoff and increased flooding, as well as the destruction of wildlife habitat, loss of scenic beauty, and loss of rare, threatened, and endangered species habitat.
- The draining of wetlands may destroy fish-spawning grounds, wildlife habitat, groundwater recharge areas, and the natural filtration and floodstorage areas of interconnecting stream systems. The resulting deterioration of surface water quality may, in turn, lead to a deterioration of the quality of the groundwater which serves as a source of domestic, municipal, and industrial water supply.

When natural resource features are located within areas of future growth, they are often developed or degraded. This has led to the continual loss of these resources over time. Although many of the problems associated with development of these natural resource features are now known and recognized, the development pressures have become ever greater as other more developable lands are becoming less prevalent within and adjacent to growing communities.

The Brown County Planning Commission has long recognized this problem and the importance of protecting and preserving these natural resource features. The *1971 Brown County Open Space and Outdoor Recreation Plan*, the *1979 Brown*

County Environmentally Significant Areas Plan, the *1996 Brown County Year 2020 Land Use and Transportation Plan*, as well as each update of the *Brown County Sewage Plan*, have all set forth goals, objectives, and policies which strive to protect the natural resource features found in the county.

Definition and Criteria

The revised 1995 Brown County Sewage Plan sets forth the following definition of important and sensitive natural resource features hereinafter referred to as Environmentally Sensitive Areas to address the concerns of the Wisconsin Department of Natural Resources and the Brown County Planning Commission.

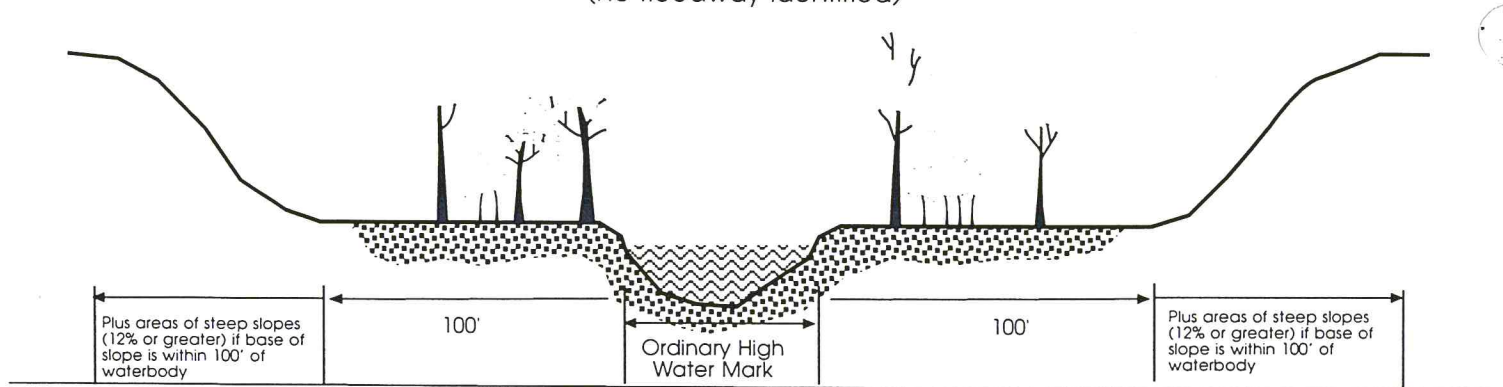
“Environmentally Sensitive Areas (ESA’s) are geographic areas of the landscape encompassing especially valuable natural resource features such as lakes, rivers, streams, wetlands, and their associated undeveloped shorelands, floodlands and areas of steep slopes, which should be protected from intensive development.”

Specifically, the following natural resource based criteria and guidelines are to be utilized in the identification and delineation of Environmentally Sensitive Areas. These standards are depicted in Figure 7-1.

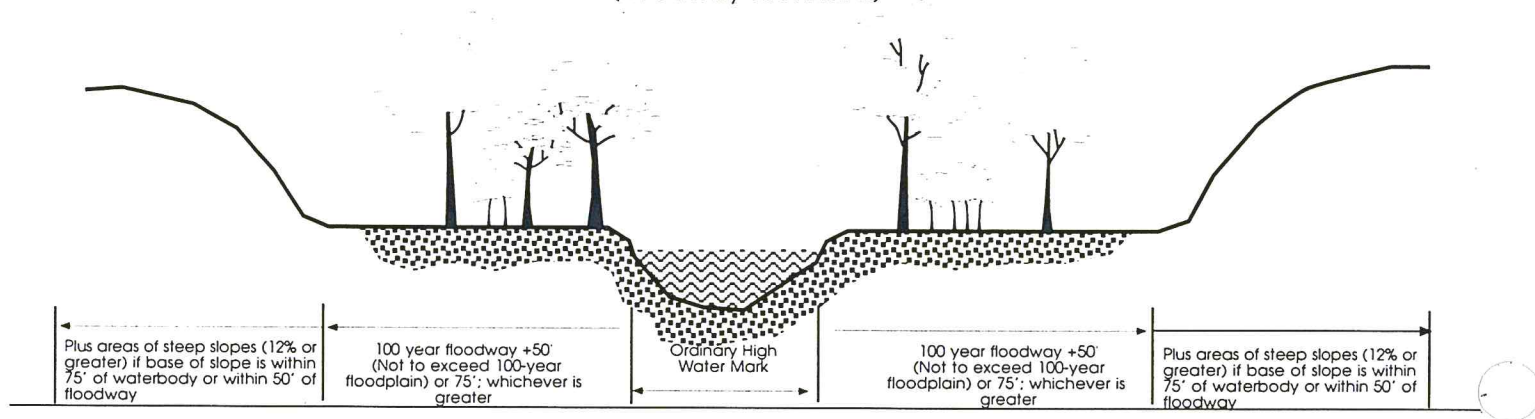
- All lakes, ponds, flowages, rivers and streams identified on the U.S.G.S. quadrangle maps shall be designated as Environmentally Sensitive Areas.
- All lakes, ponds, flowages, rivers and streams identified on the U.S.G.S. quadrangle maps shall be considered navigable until such time as an official Wisconsin Department of Natural Resources determination indicates otherwise.
- If no floodway has been identified for a navigable body of water, the Environmentally Sensitive Area associated with the water body shall extend 100 feet beyond the ordinary high water mark. In addition, if steep slopes (slopes 12% or greater) are present within this area, and extend outward from this area, the ESA boundary will be adjusted to include such slopes.
- If a floodway has been identified for a navigable body of water, the Environmentally Sensitive Area associated with the waterbody shall be the greater of the two: either 50 feet beyond the floodway (but not beyond the floodplain boundary); or 75 feet beyond the ordinary high water mark. In addition, if steep slopes (slopes 12% or greater) are present within this area, and extend outward from this area, the ESA Boundary will be adjusted to include such slopes.
- Any Environmentally Sensitive Area associated with a non-navigable lake or pond shall extend 25 feet beyond the ordinary high water mark.

Figure 7-1 Environmentally Sensitive Area Standards

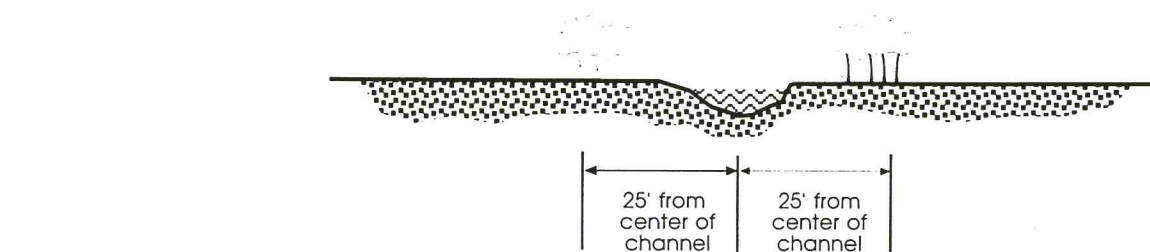
Navigable waterbody
(no floodway identified)



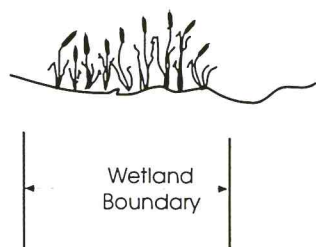
Navigable waterbody
(floodway identified)



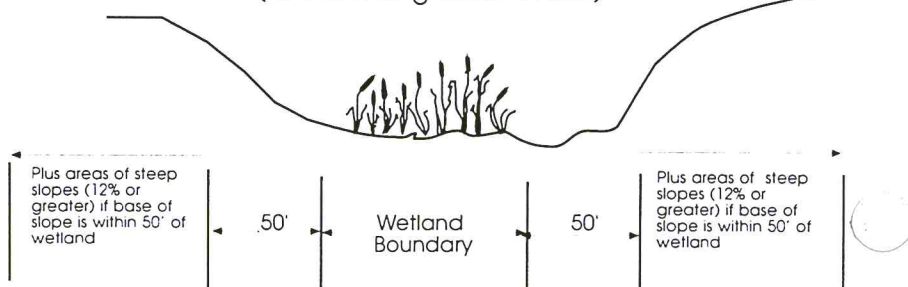
Non-navigable Streams



Wetlands
(less than 2 acres or in size)



Wetlands
(2 acres or greater in size)



- Any Environmentally Sensitive Area associated with a non-navigable flowage, river or stream shall extend 25 feet from both sides of the center of the channel.
- All wetlands identified on the Wisconsin Wetlands Inventory maps shall be designated as Environmentally Sensitive Areas.
- Any Environmentally Sensitive Area associated with a wetland two acres or greater in size shall extend 50 feet beyond the edge of the wetland. In addition, if steep slopes (slopes 12% or greater) are present within this area, and extend outward from this area, the ESA Boundary will be adjusted to include such slopes.
- Other significant natural resource features, including but not limited to, river and stream headwaters, woodlands, high-value wildlife habitat areas, geologic and natural area sites, steep slopes, and wet, poorly drained and organic soils, shall be considered for inclusion as an Environmentally Sensitive Area on a case-by-case basis.

The *1995 Brown County Sewage Plan* and the *Brown County Year 2020 Land Use and Transportation Plan* specifically recommend that Environmentally Sensitive Areas not be developed for intensive uses. These plans recommend that sanitary sewers not be extended into ESA's for the purpose of accommodating urban development. It is recognized however, that in some cases it may be necessary to construct sanitary sewers or other utilities through the ESA's. In these instances, appropriate caution and care must be exercised so that any disturbance to the ESA is minimized and that the subject area is returned as much as possible to its pre-disturbed conditions.

The Environmentally Sensitive Area concept shall apply to all lands within identified sewer service areas in Brown County, and to all future additions to sewer service areas. In those instances where lands have previously been platted, the ESA definition in force at the time of county approval of the plat shall apply.

Intensive uses to be considered for exclusion from within ESA's include but are not limited to: permanent structures such as residential, commercial, or industrial buildings; impervious surfaces such as parking lots and concrete or asphalt surfaced storage areas; and site disturbing activities such as extensive clearing, grubbing, grading and filling. Any consideration of development within or adjacent to an ESA must be in conformance with all applicable Federal, State, and local rules and regulations including the provisions and requirements of the Federal Clean Water Act, Wisconsin Administrative Codes NR 103, 115, 116, 117, 121, 216 and 299, and local zoning ordinances.

Uses which may be considered compatible with the protection and preservation of Environmentally Sensitive Areas include non-intensive recreational facilities such as trails and picnic areas; in some instances, utility facilities such as sewer and water lines, detention basins, and stormwater drainage-ways; and limited clearing, grubbing, grading and filling.

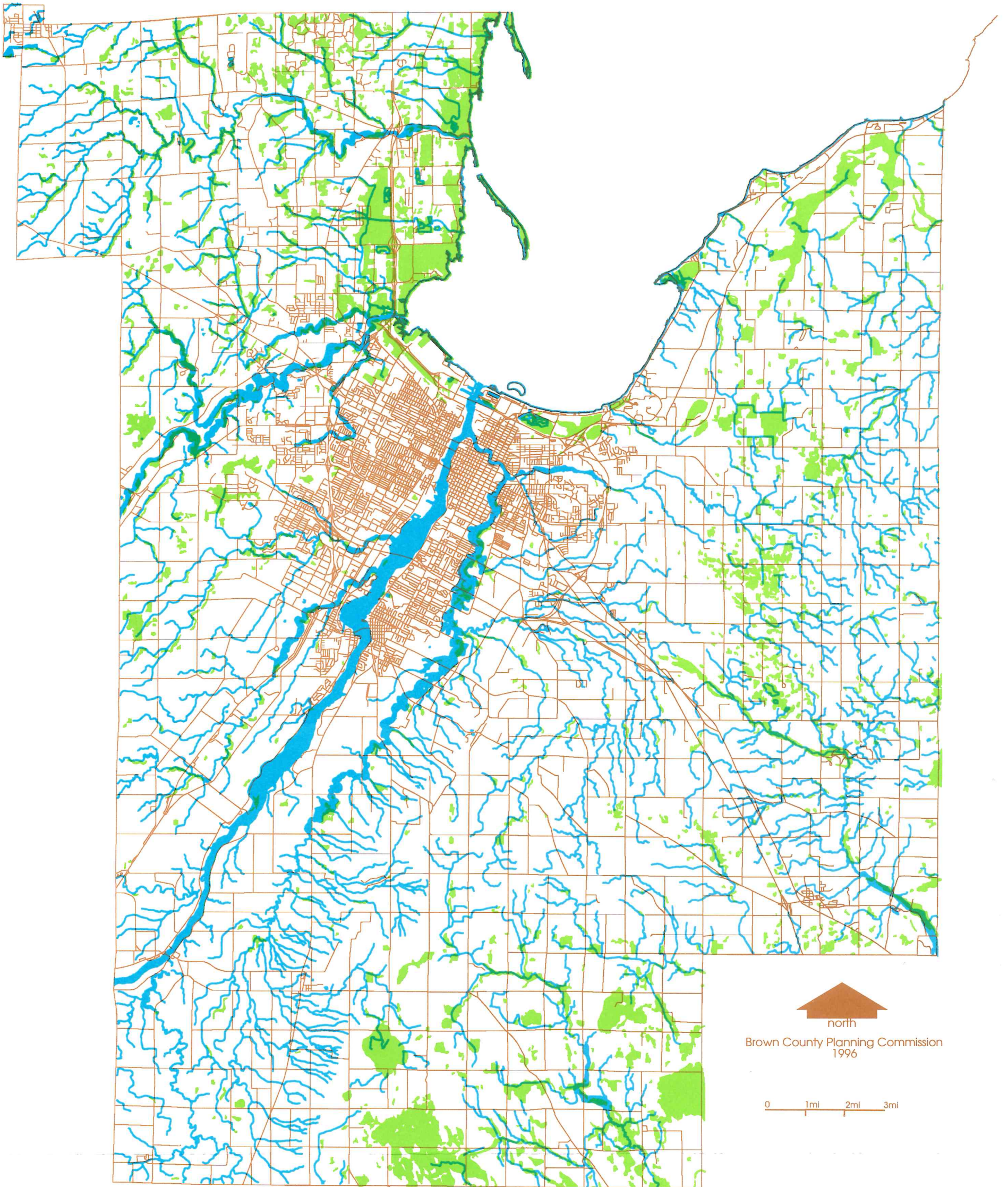
It should also be noted that the sanitary sewer service area maps set forth in the 1995 Brown County Sewage Plan and, in particular, the Environmentally Sensitive Areas shown thereon, are a representation of conditions at the time of map preparation. Such physical features may change over time from natural or human causes. Therefore, it is extremely important that the presence and location of wetlands, navigable waters, floodways, steep slopes, and other similar site features be verified prior to any land disturbing activity.

While this plan delineates the Environmentally Sensitive Areas of Brown County, it is understood that such features may change over time for a variety of reasons. Thus, to accommodate reasonable and justifiable changes, this plan delineates procedures and criteria to be followed in addressing such changes. To facilitate the timely consideration of proposed changes, a separate Amendment Application Manual has been prepared to address both "major" and "minor" Environmentally Sensitive Area revisions. A summary of this process is set forth in Chapter 9.

ESA's have been delineated using GIS software. Map 7-1 shows the general location of ESA's throughout Brown County. Additional ESA detail can be obtained by consulting the GIS generated 2015 SSA maps developed for each community. Although ESA's may overlap developed lands, it's their location throughout the undeveloped portions of the Sewer Service Area that will determine future sewer development.

Recommendations

1. Discourage sewer extensions into environmentally sensitive areas.
2. Design and construct those sanitary sewers which must cross or follow environmentally sensitive areas so that once they are placed, they will not have to be replaced or augmented and so that they will not permanently disturb the areas. ESA's disturbed as a result of extending sewers shall follow the guidelines of the Brown County Planning Commission approved Restoration Plan.



Map 7-1

Environmentally Sensitive Areas

- Wetlands
- Navigable Streams

Note: Mapping includes buffer area requirements
Source: WI DNR Wetland Inventory Maps USGS

Chapter 8

Implementation

Institutional Responsibilities

Although the Brown County Planning Commission is the local administrative authority for the implementation of this sewage plan, the cooperation of local municipalities and town sanitary districts is paramount to its success. Recognized as a major implementation tool of the *Year 2020 Land Use and Transportation Plan*, the *1995 Sewage Plan* provides direction to the fulfillment of future land use goals and objectives. In addition to local support, the actions of state authorities, such as the WDNR and DILHR, will greatly impact the success of this plan.

WDNR Non-Proliferation Policy

The non-proliferation policy of the Wisconsin Department of Natural Resources is designed to restrict construction of new sewage treatment facilities in order to preserve and protect the quality of Wisconsin water. According to this policy, the DNR can deny approval for a new sewage treatment facility, unless it meets certain criteria. For example, a treatment facility to serve existing residential development would not be approved unless, 1. there is a documented and severe existing water quality problem; 2. public health problems related to inadequate sewage disposal exist; or 3. the existing treatment facility is not in WPDES compliance. A new facility may also be denied if it is not a cost effective solution or is not municipally owned, operated and maintained.

Approval of an interim treatment facility is also necessary. This type of facility would serve areas delineated within the future sewer service area of another existing facility, as approved under an areawide water quality management plan. The same criteria applies to interim treatment facilities as do new facilities, in addition to denying approval if the sewage collection is not designed so that it can be easily connected to the regional system in the future. Also, it may be denied unless an agreement is signed by involved municipalities which contains a specific date for abandonment and connection.

Third, treatment facilities serving isolated nonresidential development like parks, airports, recreational facilities, and institutions such as hospitals, prisons and schools may be denied approval if joint treatment with other wastewater treatment systems is not feasible. The proposed facilities plan may not be accepted if it is designed to treat only wastes generated by the proposed nonresidential development and the WPDES permit limits service to the proposed nonresidential development.

Additionally, treatment facilities to serve new residential development for subdivisions, mobile home parks and condominiums may be denied, yet variances may

be granted. Variances to this general prohibition may be granted only after the DNR has considered the public interest, environmental impacts, socioeconomic impacts and the impact on orderly development and provision of government services within the service area. Furthermore, the proposal must be consistent with department responsibilities, be municipally owned, operated, maintained, and more cost-effective than other alternatives. Lastly, all other governmental approvals and permits have to be obtained. If the above criteria are met then the DNR may grant a variance.

Similarly, treatment facilities for existing mobile home parks and condominium developments may not be approved unless the department considers the public interest, environmental impacts, socioeconomic impacts, impact on orderly development and provision of government services. Or if the first two conditions are met and the owner submits adequate proof that sufficient funds to operate, maintain, and abandon the facility are available, then it may be approved. Additionally, the owner must submit documentation showing that the new treatment facility is being proposed as replacement of failing soil absorption systems which have been used for at least ten years. Proof must be provided of the inability to form a town sanitary district or other appropriate municipal entity to oversee the facility.

Finally, any new sewage treatment facility must be in accordance with any approved areawide water quality management plan. There also may be additional criteria necessary to address regional or local considerations.

Proposed ILHR 83 Code Changes

Chapter ILHR 83 of the Plumbing Code is administered by the Department of Industry, Labor, and Human Relations. The chapter establishes specific and prescriptive minimum standards for the design, installation and maintenance of private sewage systems. The proposed revisions represent a complete re-evaluation of the private sewage program as well as the code.

Unlike the current chapter, the proposed ch. ILHR 83 does not dictate or prioritize specific solutions or the selection of systems; rather, the chapter delineates the critical factors, parameters, options, prohibitions and limitations for the design of privately-owned wastewater treatment systems. Under the framework of chapter ILHR 83, designers and owners would be allowed to choose the appropriate method for reducing the contaminant loads and dispersing the hydraulic flows by selecting and arranging pre-recognized treatment components, single-use designs, site credits and other means in conjunction with site limitations for a particular project.

The proposed chapter revisions have been the subject of much debate. Comments range from concern over its potential impact on facilitating urban sprawl to the cost associated with installing future replacement systems.

Public hearings were held throughout the state during April of 1995. Due to the level of comments received, it is likely another draft of the code will be formulated. The proposed time line for adoption of the code has been revised, targeting a 1998 adoption date.

Financial Assistance

Clean Water Fund

The Clean Water Fund (CWF) is a State of Wisconsin environmental loan program that was established in June, 1990. The purpose of the fund is to provide low interest rate loans and grants for municipal wastewater projects. The Clean Water Fund intended to fill the void in funding sources when the federal government phased out its wastewater project funding in 1994. The Department of Natural Resources (DNR) is the primary administrator of the CWF program, and the Department of Administration is the financial manager for the CWF program.

The CWF provides funds for projects to build new wastewater treatment plants, modify or expand existing treatment plants, construct interceptors or build a sewer system in an unsewered area. Funds for these various projects are available only for a Wisconsin town, village, city, county, town sanitary district, or lake protection district. Other entities that may benefit are metropolitan sewerage districts and federally-recognized Indian tribes, but not individual homeowners or businesses.

Eligible candidates for the Clean Water Fund can receive loans ranging from \$25,000 to \$74.4 million. Various costs that the loan can cover include materials, equipment, labor, land, and professional fees. Refinancing an approved project less than five years old is also an option. The CWF will also finance the treatment of industrial discharge. By statute, CWF loans must mature in no more than 20 years from the date of the first loan disbursement to a community.

Additional loan terms in the Clean Water Fund have several requirements. First, the municipality must provide the CWF with a tax-exempt bond or note. The bond can be a general obligation, revenue pledge, special assessment pledge, or combination of pledges. The attorney for the municipality will need to be involved in the preparation of certain documents and rendering advice on the debt issuance process. The municipality does not have to pay to obtain a bond rating from a rating company. Currently, there are no fees, discounts, or other charges paid to the Clean Water Fund.

Before a municipality begins its project, it is recommended that the community contact the DNR because the proposed project must be approved by the DNR, if a loan is granted. The municipality must have a wastewater user charge system that is fair and equitable. If not already in place, a replacement or depreciation fund must be established to replace equipment that will wear out during the life of the treatment plant. Also, the community must be able to afford the proposed loan payments.

Finally, the Clean Water Fund is an important tool municipalities can utilize when in need of financial assistance. In addition to benefiting the community that receives the loan, others can utilize available money from future loans made from the repayment of Clean Water Fund Loans in the form of a revolving loan fund. The loan program also provides an incentive for users to conserve water resources since a more realistic cost of capital will be reflected in the user charges. Lastly, since grants provide cost-free capital, they tend to keep user charges artificially low.

To apply for a Clean Water Fund loan, an "Intent to Apply" form must be filed with the DNR by December 31 and a "CWF Financial Assistance" application needs to be filed by the following June 30. Project planning documents must also be submitted as part of the process.

Wisconsin Fund

The Wisconsin Fund, established through the Private Sewage System Replacement or Rehabilitation Grant Program in 1978, can provide financial incentives to protect and improve public health, safety, and groundwater quality in Wisconsin.

As part of this program, Wisconsin counties and Indian tribes may apply to the Department of Industry, Labor, and Human Relations (DILHR) for grants to assist homeowners and small commercial business owners in rehabilitating or replacing a failing private sewage system. Failing private sewage systems fall into three categories. Category 1 systems fail by discharging sewage to surface, groundwater, drain tiles, bedrock, or zones of seasonally saturated soils; Category 2 systems fail by discharging sewage to the surface; and Category 3 systems fail by causing sewage backup into the structure served. The program is voluntary.

To apply for a grant, an individual must first contact the Brown County Zoning Administrator's Office. The County staff will help determine the cause of your sewage problems, suggest possible solutions, and establish whether or not you are eligible to apply for a grant.

When applying for a grant, you must obtain a sanitary permit to replace or repair your system, complete an application form, and provide evidence of your annual income. Forms and instructions are provided by the county and, after completion, must be returned to the County.

If you are the principal owner occupant of a private residence or a small commercial business owner, you may be eligible for a grant, providing that you continue to meet a list of eligibility requirements. These include:

- Your County is participating in the program. Brown County is a participant.

- You have received a written enforcement order or determination of failure to correct the violation.
- Your principal residence or small commercial establishment is not located in an area served by a municipal sewer.
- The income of all owners of the principal residence is less than \$45,000 and the small commercial establishment less than \$362,500.
- You comply with all other program requirements.

Various components, which may be eligible for a grant, include soil evaluation, soil testing, installation of replacement or additional septic tanks, and installation of a conventional, in-ground pressure, at-grade, or mound soil absorption area, and installation of a holding tank.




Requirements also state that, to qualify, your principal residence must be occupied by yourself at least 51% of the year. Seasonal homes and rental units do not qualify. To qualify as a small business, the total wastewater flow rate may not exceed 5,000 gallons per day. Also, an inspection of your system by a plumbing inspector or approved county representative is required before you can apply for a grant.

Those who are eligible to participate in the rehabilitation program could receive up to \$7,000. Grant funds are allocated on an annual cycle. However, if an applicant is denied, they are still required to correct the failing private sewage system. The county submits an annual application to DILHR by January 31 for all individuals who have applied since the previous February 1. DILHR makes grant awards for applications received by January 31 in the following fiscal year, or after July 1.

Recommendations

Brown County should:

1. Work closely with communities and town sanitary districts in providing data and planning expertise during the development of facility plans.
2. Assist communities, town sanitary districts and private homeowners in procuring financial assistance through the "Wisconsin Fund" and "Clean Water Fund".
3. Evaluate, on a case-by-case basis, the economic and environmental impacts of proposed regional sewerage service alternatives on existing Brown County Sewerage facilities.

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4. Provide comments on revisions and adoption of Chapter ILHR 83 of the Plumbing Code as administered by the Department of Industry, Labor and Human Relations.
 5. Coordinate, evaluate, and monitor the actions of local and state authorities on adherence to county land use goals and objectives.

Chapter 9

Amendments

The purpose of this chapter is to present a summary of the process required to amend the Brown County Sewage Plan. This chapter will present the reasons for such a process, and identify the governmental agencies which must be involved in this process and their responsibilities. Detailed information concerning this process is set forth in the Amendment Application Manual.

The provision of a process whereby sewer service area and environmentally sensitive area boundaries may be amended is essential for maintaining sewer service areas which are sound and in the public interest. With such a process, founded upon sound engineering and planning principals, it is possible to delineate sewer service areas and environmentally sensitive areas which balance both economic and environmental concerns. Properly prepared, sewer service area amendments can provide communities with needed flexibility to:

- respond to unanticipated community growth,
- reflect additional or new technical data,
- react to changing trends,
- and incorporate public input.

Properly prepared sewer service area amendments can also identify and preserve sensitive natural resource features and help protect water quality.

From 1992 to 1995, Brown County Planning Commission staff have responded to over 40 sewer service area amendment requests, involving over 5,000 acres of land. A total of 2,042 hours were devoted to amendment requests during this time period. Many of the sewer service area amendment requests were the subject of long debates, sensitive environmental and archeological concerns, and municipal service issues. Staff review of the sewer service area amendments have become more comprehensive in scope as these amendments have become more detailed and controversial in nature.

In an effort to respond more promptly to these requests, while also continuing to provide the level of review these increasingly complicated amendments warrant, the Brown County Planning Commission staff, with the support of the Sewage Plan Update Steering Committee, has developed an Amendment Application Manual. Previously, the "amendment sponsor" determined on their own what information to submit to the BCPC staff for review of the sewer service area amendment. The level of detail submitted by the amendment sponsors typically varied greatly, and oftentimes required a substantial staff investment of time to interpret and verify.

Through the use of the Amendment Application Manual, amendment sponsors would submit information based on the guidelines and criteria outlined in the

manual. This approach enables the amendment sponsors to know precisely what information to provide to the BCPC staff and allows such information to be provided in a consistent manner.

This approach transfers the "documentation of need" to the sponsor. Staff, in turn, reviews the application in cooperation with the staff of the DNR. Dependent upon their findings, the staff will either request additional information; issue a recommendation; or submit the amendment request with a staff recommendation to the Brown County Planning Commission Board of Directors and the Wisconsin Department of Natural Resources for formal review and action.

All amendment requests must be submitted and/or approved by the concerned local unit of government prior to review by the Brown County Planning Commission. Furthermore, all amendment requests must be reviewed by appropriate DNR and BCPC staff. In certain instances, DNR and BCPC staff concurrence on a requested amendment may be final and binding (see Minor Amendments), in most circumstances however, a formal action by the Brown County Planning Commission Board of Directors and by the Department of Natural Resources will be required (see Major Amendments).

In order to respond more appropriately to amendment requests, the staff of the BCPC has created four similar but slightly different review processes. They are:

Minor Amendments

- Minor Sewer Service Area Amendments: involves any addition to or deletion from a sewer service area encompassing an area less than five (5) acres in extent. Such an addition must be located immediately adjacent to a current sewer service area, while any such deletion must not result in the creation of a "hole" in a current sewer service area.
- Minor Environmentally Sensitive Area Re-delineations: involves any addition to or deletion from an Environmentally Sensitive Area encompassing an area less than five (5) acres in extent. Such a deletion must not encompass any wetlands or floodways, must not intrude more than halfway into any ESA buffer or to within 75 feet of a navigable body of water, and must not result in any significant adverse water quality impact as determined by the Wisconsin Department of Natural Resources and the Brown County Planning Commission.

Major Amendments

- Major Sewer Service Area Amendments: involves any addition to or deletion from a sewer service area not covered as a Minor Sewer Service Area Amendment. Typically involves those amendment requests encompassing an area five (5) or more acres in extent.
- Major Environmentally Sensitive Area Re-delineation: involves any addition to or deletion from an Environmentally Sensitive Area not cov-

ered as a Minor Environmentally Sensitive Area Re-delineation. They typically involve those amendment requests encompassing 5 or more acres in extent, or those which may result in a significant adverse water quality impact.

Through this approach, the Brown County Planning Commission envisions that those sewer service area and environmentally sensitive area changes which are smaller in scope and impact can be reviewed more expeditiously, while those changes with a more significant impact receive the detailed review and consideration they warrant.

In addition to the four types of amendments noted above, the 1995 Brown County Sewage Plan has also identified five general types of reasons or policies for sewer service area and environmentally sensitive area changes, including:

- To Correct Mistakes. Sewer service areas and environmentally sensitive areas may be changed to correct map, data, projection, or allocation errors found in the county sewage plan.
- Acreage Swap. Sewer service areas may be changed as long as there is no net increase in the amount of land to be provided sewer service. An area equal in size to that being added must be removed from the sewer service area, and must involve lands envisioned for similar uses.
- To Accommodate Existing Development. Sewer service areas may be expanded to include areas of existing development provided that the area has been identified as an onsite sewage disposal problem area by the Wisconsin DNR or by the Brown County Planning Commission, and that it has been determined that the provision of public sanitary sewer service to this area is the most cost-effective alternative.
- To Accommodate Special Regional Uses. Sewer service areas may be expanded provided there is a documented need for public sanitary sewer service for a unique facility or development of regional or statewide importance.
- To Reflect Proper Land Use Planning. Sewer service areas and environmentally sensitive areas may be changed to reflect sound local or regional land use planning.

Each sewer service area and environmentally sensitive area amendment request must specify what amendment review process applies (major or minor, SSA or ESA), and must meet the requirements of at least one of the five policies of change. Further information concerning the four review processes, and the requirements for each of these five policies, are set forth in the Amendment Application Manual.

It is hoped that the Amendment Application Manual will reduce staff time in the review of sewer service area and Environmentally Sensitive Area amendments, and provide a standardized and user friendly document for any party to understand and complete.

Appendix A

On-site Wastewater Treatment

Brown County On-Site System Experience

On-site wastewater systems are those which store, treat, or dispose of wastewater (or perform a combination of these functions) on the site at which the wastewater is generated. On-site wastewater systems are currently being used in Brown County in those areas which are not served by off-site systems.

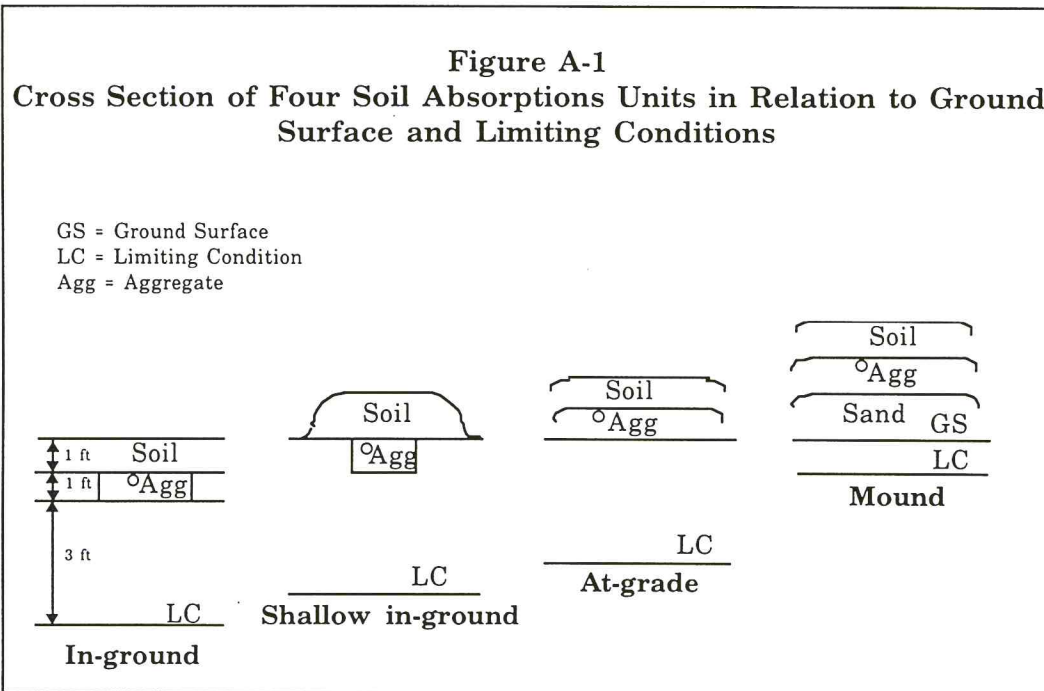
Brown County is currently experiencing rapid growth in its rural communities. This growth is accompanied by the need to properly treat wastewater generated. As of December 31, 1995 the Brown County Zoning Administrator's Office has inventoried 1,389 holding tanks, 1,257 mound systems, and 2,065 conventional systems. These systems account for those installed after 1979. It is estimated by Brown County Planning Commission staff that approximately 9,300 on-site systems exist county-wide. These systems represent the options to accommodate development where public sewer does not exist.

The availability of these systems is dependent upon the type of soil at each site. The holding tank is considered the system of last resort due to soil conditions that are unsuitable for a soil absorption unit. Soil absorption system selection currently is based on the limiting conditions. Figure A-1 shows a cross section of four soil absorption systems: the in-ground trench, the shallow in-ground trench or bed, the at-grade, and the mound. Although any of the aforementioned systems can be pressurized, most pressure systems occur at the at-grade or mound unit level. In-ground and shallow in-ground systems are often installed as gravity flow systems. In Brown County, most of the soil absorption systems installed are in-ground gravity (conventional) or mound systems.

Brown County Code requires periodic inspection of all systems. A student intern has been hired annually since 1990 to help meet this requirement. The results of the surveys for the summers of 1993 - 1995 follow in this report. The survey results provide documentation relative to the performance of on-site systems in Brown County. The summer intern is responsible for increasing awareness of and compliance with State Code NR 113 and ILHR 83 through public contact. The goals of increasing awareness and compliance with regulation was achieved by educating the public and offering information to them.

Presently, approximately 11.7 percent of all housing units in Brown County dispose of their wastewater through some form of on-site system. This is a 4.3% reduction since 1980. The declining percentage indicates that a greater percentage of newly-constructed housing units utilize public sewer. It also reflects activity associated with abandoning on-site systems for the purpose of connecting to public sewerage systems.

Although on-site systems represent a smaller percentage of the growth total, the number of new private on-site systems installed continues to increase in Brown County. Table A-1 indicates that from 1990 through 1995, a total of 1,564 sanitary permits were issued for the construction of on-site systems in Brown County. The Brown County Zoning Administrator's Office estimates less than 2 percent of the sanitary permits are not utilized; thus, the monitoring of sanitary permits issuance is very reflective of on-site system installation activity.



The majority of this increase in new systems appears to be occurring in several distinct areas within Brown County (see Table A-1). These areas include the Towns of Hobart, Pittsfield, Suamico, Ledgeview, and Lawrence. Each of these towns has had over a 90% increase in new systems added from systems since 1989. The Towns of Hobart and Pittsfield have increased 129.6% and 293.3% respectively, while the Town of Suamico has risen by 209.5%. These percentages indicate a growing trend of people moving into Brown County and/or moving out of serviced metropolitan areas. The percentage increases infer a growing urban flight condition.

As more private on-site sewage systems are installed, the issue of providing cost effective public sewer service may be jeopardized since minimum lot size requirements in many towns are greater than 1 acre in size. In addition the conditions of sprawl may be exacerbated due to the desire or need for larger lots to accommodate the on-site system of choice.

Table A-1
Sanitary Permits Issued 1990 Through 1995

Municipality	Alternative		Conventional		Holding Tanks		Total
	New	Repl.	New	Repl.	New	Repl.	
Village of Allouez	0	0	0	0	0	0	0
Village of Ashwaubenon	0	0	0	0	0	0	0
Town of Bellevue	11	11	0	1	12	9	44
City of De Pere	0	0	0	0	0	1	1
Town of Eaton	44	20	2	1	12	14	93
Town of Glenmore	20	23	0	2	7	16	68
City of Green Bay	7	5	10	3	15	12	52
Town of Green Bay	19	15	51	3	18	10	116
Town of Hobart	58	29	98	32	40	9	266
Town of Holland	17	21	4	3	5	3	53
Village of Howard	6	7	21	14	10	19	77
Town of Humboldt	17	22	2	1	26	15	83
Town of Lawrence	47	21	8	6	54	23	159
Town of Ledgeview	58	16	5	5	53	15	152
Town of Morrison	14	17	7	11	3	10	62
Town of New Denmark	49	21	13	5	4	3	95
Town of Pittsfield	38	22	70	15	2	18	165
Town of Rockland	92	25	6	2	14	3	142
Town of Scott	18	6	7	1	15	10	57
Town of Suamico	80	17	273	46	25	14	455
Town of Wrightstown	54	33	4	1	15	5	112
Village of Wrightstown	3	1	0	0	1	2	7
Total	652	332	581	152	331	211	2259
8 sanitary permits were issued for repair of mound systems. 44 sanitary permits were issued for reconnection of on-site waste systems. 25 sanitary permits were issued for renewal of sanitary permits. 8 sanitary permits were issued for replacement of tanks only. 1 sanitary permit was issued for a privy type system. 2,345 sanitary permits were issued during this 6-year period.							

Holding Tanks

The holding tank is one system that offers an effective means to collect and store waste until it can be properly treated at a wastewater treatment facility. Unfortunately, the effectiveness of holding tanks can be eliminated by alterations or by service through improper channels.

The public health hazards associated with untreated holding tank waste are well known. There are approximately 40 types of viruses and 1,500 types of bacteria in holding tank wastes. These can cause Hepatitis, Meningitis, Cholera, Salmonella, Dysentery, and other illnesses. Proper disposal of holding tank waste is

vital to ensure that individuals do not become ill by coming in contact with improperly handled wastes. In addition, potential contamination of surface and groundwater can occur if holding tank wastes are not properly treated.

As of December 31, 1995, the County currently had 1,389 recorded holding tank units. For each of these sites, a Holding Tank Servicing Contract between the homeowner and a licensed pumper is required. The pumper agrees to send to the County, twice a year, the number of gallons of wastewater that it pumps from the site. This gives the Brown County Zoning Administrator's Office a means to chart holding tank activity throughout the county. These reports are also used to choose what sites to survey. Taking a yearly average of wastewater generated per household and comparing it to the unit pumping reports that the Brown County Zoning Administrator's Office receives makes the task of picking what sites to be surveyed easier by choosing the sites that pump below this average.

The annual selection process to determine where the inspections would occur begins with filing all pumping reports for the County. The process continues by withholding all sites that pumped limited gallons of wastewater for the year. From this total, the list is narrowed by looking at three different characteristics. These included a considerable drop in the amount of wastewater that was pumped from the previous year, past inspections that called for a reinspection, and structures that pumped no gallons for the year. After this process, for example, 196 sites remained for inspection in 1995. All survey sites are plotted on maps of the town, village, or city that they were in and the top portion of the Holding Tank Inspection Reports forms are filled out (see Appendix F).

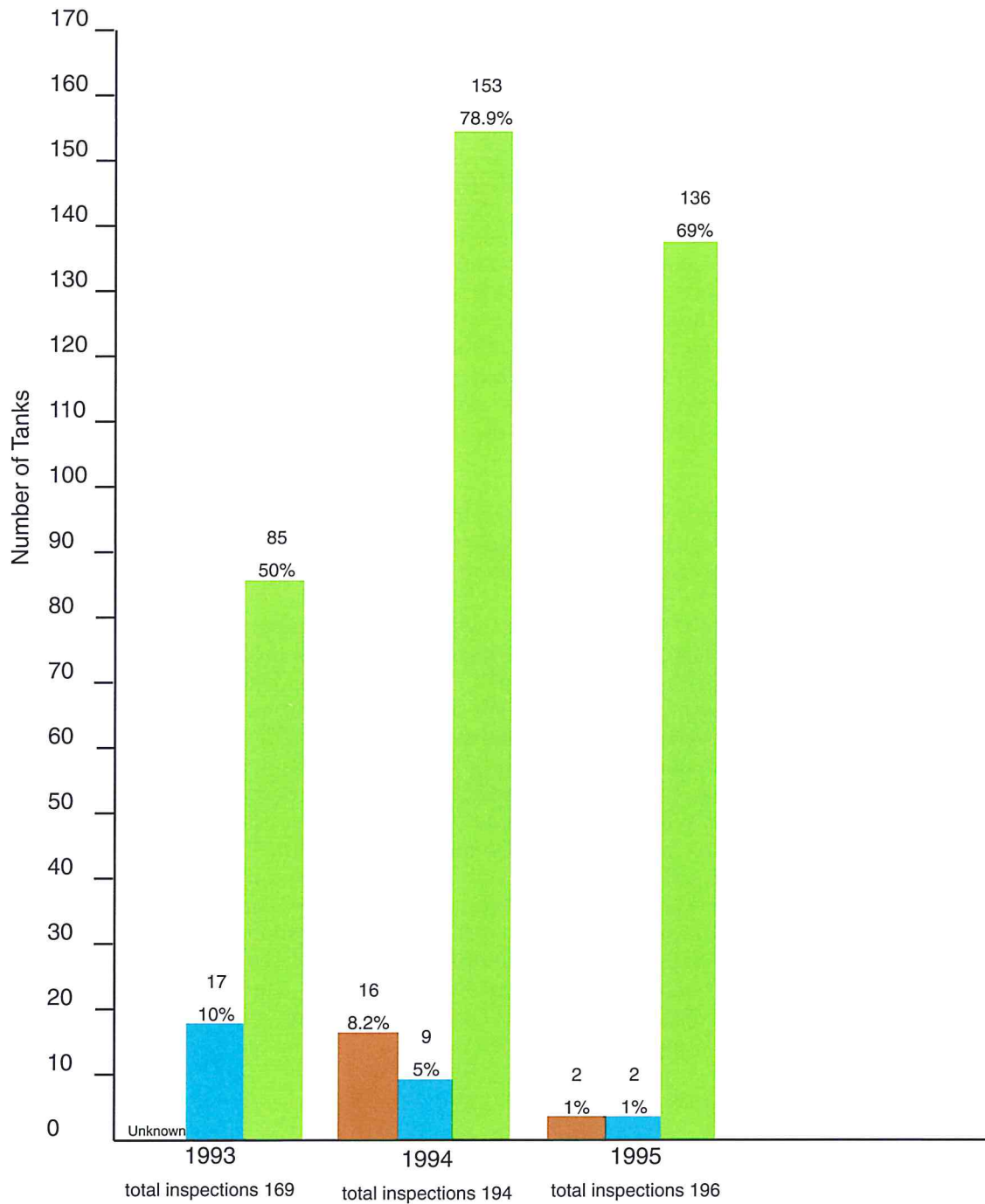
Over the three years of inspections, from 1993 to 1995, several items were noted while at each holding tank site. As a result of recorded data, several trends can be seen regarding either holding tank violation or improvements in the maintenance of the holding tanks. Beginning in 1994, there has been a decrease in the number of sites either abandoned or not found. In 1994, 194 holding tanks were inspected and 16, or 8.2% were abandoned or not found; while in 1995, it decreased to two (2) out of 196 inspected tanks, or 1% (see Figure A-2).

There has also been a small decrease in the amount of holding tanks converted to public sewer. In 1993, under 10% of holding tanks inspected were converted. The exact amount is unknown due to differences in each inspectors' method of gathering data. This amount decreased to 5% or nine (9) out of 194 in 1994 and, finally, to 1% or two (2) out of 196 in 1995. This slow decrease in conversion to public sewer should not be viewed as a concern since each conversion is weighed on the basis of cost effectiveness and can vary greatly from year to year.

On the other hand, the amount of holding tanks still in need of servicing is very high. "In need of servicing", means the holding tank is in violation of having a missing lock, chain, warning label, or a warning system that is not operational. In addition, any holding tank in need of pumping was also classified as needing servicing. In 1993, 85 or 50% of 169 holding tank inspections were found to be in need of servicing. This percentage increased in 1994 when 153 out of 194 inspec-

Figure A-2

Holding Tank Inspection Summary 1993 - 1995



- Abandoned / not found
- Converted to public sewer
- In need of servicing
(pumping, missing lock,
chain, warning label etc.)

tions or (78.9%) were found to be in need of servicing. By 1995, the percentage had decreased to 69% or 136 out of 196 inspections (see Figure A-2). Hence, it appears continued intensive inspection and monitoring of holding tanks is warranted. Table A-2 reveals detailed inspection data by community for the years 1993 through 1995.

Finally, several owners of inspected holding tanks were found to be in serious violation of state and county codes for discharging effluent to the surface. Although an exact number of violations is not available for 1993, it should be noted that several survey sites had illegal pumping occurring. This usually entailed direct pumping of wastewater onto a lawn or into a nearby ditch. In 1994, a total of 15 holding tanks (8.9 % of 194) were reported for committing this code violation. A small decrease in 1995 shows 13 or 7% of 196 inspections were discharging effluent to the surface. Each of these violations was documented with photographs for proof of violation and each were sent notices stating they must comply with State Code NR113 and County Code or face a possible monetary forfeiture.

Other trends the holding tank inspections revealed were that people who were not previously surveyed seemed as likely to be in violation when compared to owners that were previously in violation.

This could be due to the fact that the people never surveyed were unaware that the inspection was forthcoming or did not understand certain aspects of the rules governing the use of their holding tanks. Generally, the owners that were notified of violations admitted they were aware of the situation and had a reason for the violation existing. This was the case with the holding tanks not being properly locked and labeled. Complaints ranged from the weatherization of locks throughout the year to not knowing where to purchase warning labels for the tanks(s). Table A-3 shows the accumulated totals for the pumping reports submitted to the Brown County Zoning Administrator's Office. Utilizing the 1994 figure of 30,067,629 gallons reported as hauled by licensed pumpers, an estimated 28,011.171 gallons of holding tank waste are unaccounted for as depicted by Table A-3. This figure is based on a rather conservative 45 gallons per capita use figure. It is clear that based on the survey findings and the results of Table A-3, the use of holding tanks presents a serious enforcement challenge to the Brown County Zoning Administrator's Office. Detailed inspection data by community from 1993 to 1995 is available in Appendix G.

Table A-2 1993-1995 Holding Tank Summary for all Inspections Made												
	1993				1994				1995			
	A	B	C	D	A	B	C	D	A	B	C	D
Allouez	0	-	0	0	0	0	0	0	0	0	0	0
Bellevue	3	-	0	3	6	0	0	5	8	0	0	7
Eaton	13	-	0	11	18	0	0	16	12	1	0	8
Glenmore	8	-	0	8	9	5	0	4	8	0	0	8
C Green Bay	9	-	0	2	2	1	0	1	4	0	0	2
T Green Bay	7	-	0	4	11	0	1	11	13	0	0	8
Hobart	8	-	0	7	11	2	0	5	15	0	0	11
Holland	10	-	0	9	13	1	0	13	8	0	0	7
Howard	11	-	1	7	5	0	0	3	10	0	0	8
Humboldt	13	-	0	7	24	3	0	25	16	0	0	14
Lawrence	20	-	2	6	26	2	8	15	18	0	0	13
Ledgeview	8	-	0	2	10	0	0	8	15	0	1	10
Morrison	4	-	1	2	8	0	0	10	4	0	0	6
New Denmark	5	-	0	3	10	0	0	11	10	0	0	10
Pittsfield	7	-	0	2	4	0	0	3	8	0	0	4
Rockland	3	-	0	3	7	1	0	5	11	0	0	4
Scott	19	-	12	2	4	0	0	1	5	0	1	2
Suamico	16	-	1	3	12	0	0	8	18	0	0	9
T Wrightstown	5	-	0	4	14	1	0	9	13	1	0	5
TOTAL	169	unk	17	85	194	16	9	153	196	2	2	136
% of Holding Tanks Inspected			10.1	50.3		8.2	4.6	78.9		1	1	69

Column Code

A = number of holding tanks inspected

B = number of holding tanks abandoned or not found

C = number of holding tanks converted to public sewer

D = number of holding tanks in need of servicing (pumping, missing lock, chain or warning label, etc.)

Source: Brown County Zoning, Summer Intern Private Sewage System Reports

Table A-3 Estimated Holding Tank Wastewater Generated VS. Holding Tank Wastewater Pumped				
Number of Holding Tanks as of 1994	1 Number of People Using Holding Tanks Annually	2 Number of Gallons Generated From Holding Tanks	3 Number of Gallons Hauled in 1994	Unaccounted for Wastewater from Holding Tanks
1360	3536	58,078,800	30,067,629	28,011,171

1. 2.6 Persons Per Household
2. 45 gpcd assumed for On-site Wastewater Generation
3. Figure taken from 1994 Sanitary and Land Use Report-Holding Tank Pumping Report

Mound Systems

Mound systems were developed in the early 1970's at the University of Wisconsin-Madison. The system is available to sites that are not suitable for conventional systems that require 56 inches of suitable soil. In the case of the mound system, two feet of suitable soil needs to be present. This system represents an effective method to treat wastewater in the rural areas of Brown County.

The first step in building a mound is to choose a certified soil tester. Soil tests and proper location are prerequisites to installation. As stated above, there must be two feet of suitable soil for a mound. In addition, the system has to be placed perpendicular to the natural slope of the property. Installation can begin once a site has been chosen, a soil test completed, the plans have been approved by the state, and a sanitary permit has been obtained.

The system consists of three major components: the septic tank, pump or dosing chamber, and the mound. The septic tank is the first area of treatment. The waste from the home is discharged to the tank and the solids are allowed to settle out. Two baffles (inlet and outlet) restrict the solids from entering the second area of treatment. This area is the dosing or pump chamber. It receives the effluent from the septic tank and pumps it out to the final component, the mound.

The mound is constructed by first removing vegetation from the surface and then discing the area. These actions make for an easier transfer of liquid from the mound to the original soil. This is followed by the construction of a sand bed/trench that will become the key ingredient in water purification. Aggregate (stone) is then placed in the bed or trench surrounding the distribution lateral. A semipermeable material is placed over the stone material to keep particles out of the aggregate while still allowing water to filter through. The mound is finally covered with a clay cap on the top to restrict moisture from entering and exiting

directly over the bed or trench of the mound. The sides of the mound are covered with top soil to allow evapotranspiration to occur, aiding in reducing the moisture that accumulates in the system.

Once constructed, the water is pumped from the dosing chamber to the mound through a force main. This leads to a manifold on bed systems, and trench systems with more than one trench. If there is only one trench, a manifold is not needed. From the manifold, the waste goes into a distribution lateral (a perforated pipe) and is discharged into the mound. Once in the mound, the effluent begins the final stage of treatment.

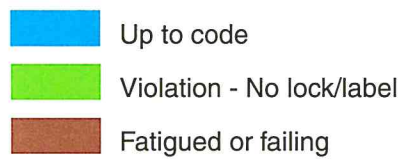
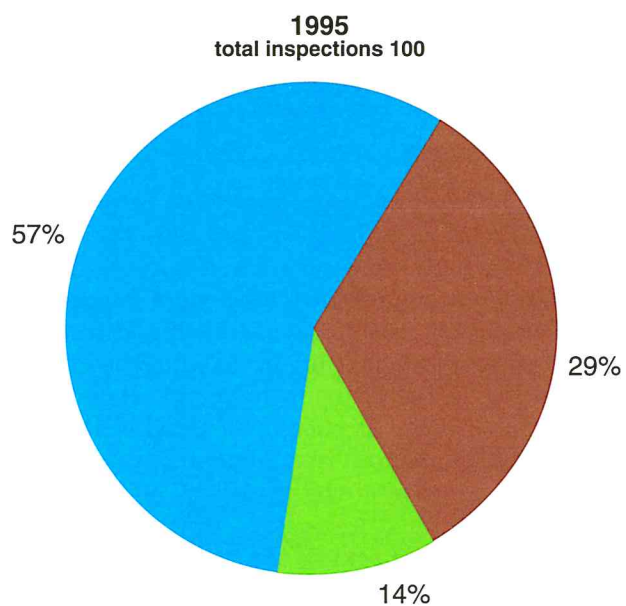
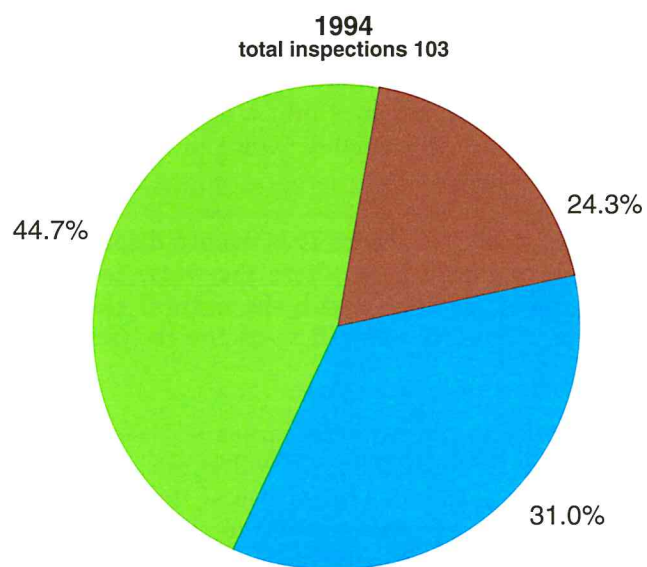
The effluent flows into the stone bed where it is evenly dispersed. Below the stone bed, the effluent enters a sand area where the water is treated. In addition to traveling down, the effluent also flows with the natural slope of the property. The down slope side of the mound is referred to as the toe (see diagram, Appendix F).

Site surveys in Brown County contained three areas of observation which remained fairly consistent from 1994 to 1995. The first was to ask residents of the property questions pertaining to the amount of use of their system. For example, residents were asked the number of people living in the home, amount of laundry done per week, service routine, etc. If nobody was home, this section was skipped. Next, the septic tank and pump chamber were inspected for code compliance and proper functioning. The final item inspected was the mound. Signs of fatigue or failure were searched by looking in the observation tubes for liquid, inspecting the mound's surface for effluent "breaking out", and soft spots near the surface. Any signs of fatigue or failure were verbally expressed to the owner or a note was left to call so the problem could be discussed. In addition to this, in 1994 and 1995 each property was left a copy of the pamphlet "Taking Care of Your System" and, when possible, the document was discussed with the owner (see Appendix F).

In 1994 and 1995, 103 and 100 mounds were inspected respectively. Out of the 103 inspected in 1994, 20 (19.4%) were fatigued and 5 (4.9%) were found to have effluent breaking the mound surface and considered failing. In 1995, 24 showed signs of fatigue and 5 of the 100 mounds surveyed were found to be failing (see Figure A-3). These two conditions can be caused by the formation of a "bio-mat" or clogging mat. This is an impermeable layer that impedes water percolation through the systems resulting in the effluent being suspended longer in the mound or discharging to the surface. It should be noted that the causes of fatigue or failure are difficult to pinpoint. It is generally believed that the main cause for fatigue or failure is overuse of the system.

Inspection of mounds also included checking the septic tanks or pump chambers for being unlocked or unlabeled. In 1994, 46 of the 103 mounds surveyed had unlocked or unlabeled pump chambers and septic tanks; but in 1995, there is a considerable decrease as only 14 out of 100 mounds had this same violation. This decrease in violations may be due to the Sewage Disposal System Inspection

Figure A-3
Summary of Mound Surveys
1994 - 1995



Program, which has increased awareness in maintenance of private sewage systems. In any event, continued monitoring of mound systems throughout Brown County appears both cost effective and warranted.

As indicated by Table A-1, 652 sanitary permits were issued for mound-type systems from January 1, 1990 through December 31, 1995 for new construction. In fact, more mound systems were installed during this period than conventional systems. It is probable that mound-type systems will accommodate a large percentage of rural development needs over the next 20 year planning period.

Conventional Systems

Conventional systems are built in areas that have at least 56 inches of suitable soil before a limitation is reached. In this case, the waste that is generated from the structure drains into a septic tank. Here the solids from the effluent are allowed to settle out by an inlet and outlet baffle that help restrict them from entering the drain field (see Appendix F for a cross section of a septic tank). As the water level in the tank increases, it is gravity-fed into the drain field or a pump chamber. The pump chamber is necessary if there is a limitation in elevation that needs to be overcome.

Once in the drain field, the wastewater is dispersed through a perforated pipe. This pipe is surrounded by a stone aggregate that evenly disperses the effluent to the soil so it can be properly treated.

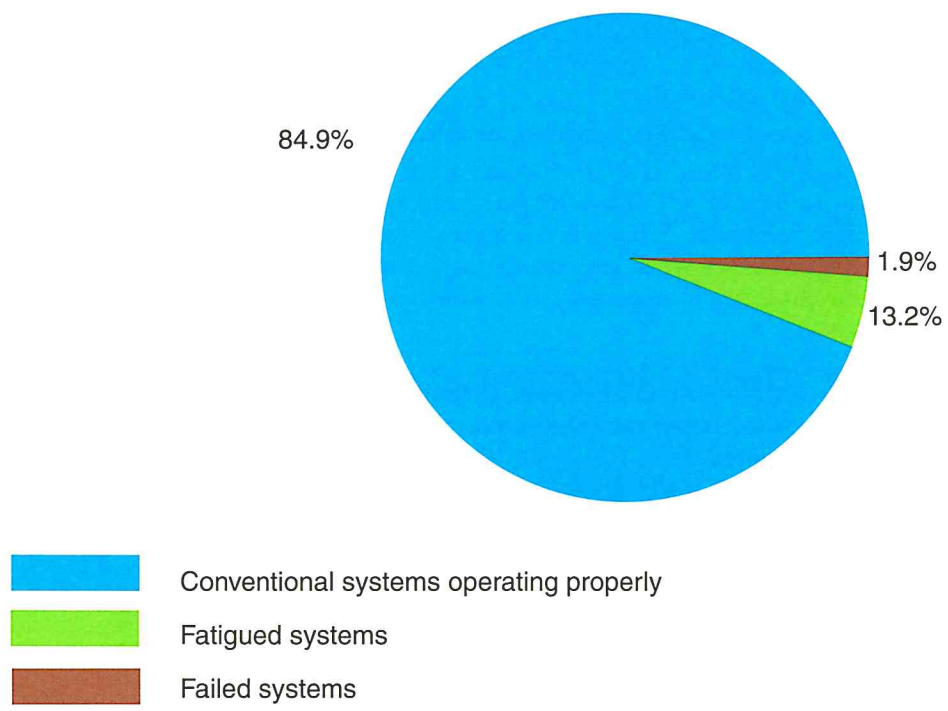
In the case of the conventional system, as with the mound system, the survey included two types of drain fields; bed and trench. A trench system is a trench, or a combination of trenches one to five feet wide that are cut into the ground, each holding one distribution pipe. A bed is a drain field where a combination of distribution pipes are laid in an excavated quadrilateral area. In this case, the distribution pipes are placed from three to six feet apart. Whether it is a trench or bed design, a vent tube is connected into the drain field and routed to the surface. This tube allows for oxygen flow through the drain field aiding in the treatment of wastewater. On larger systems, there may be more than one vent.

Conventional systems were not surveyed in the past; therefore, only 1995 data is available for review. The age of the 53 conventional systems surveyed in the summer of 1995 range from 15 to 23 years old. Two of the systems were pre-1970 with the exact date of installation unknown. The survey indicated that only one out of the 53 systems was found to be failing (see Figure A-4).

In addition, seven of the systems displayed signs of fatigue, such as effluent in the vent tube or soft, spongy areas on the surface of the system (see Table A-4). A total of 12 sites were found to be in violation for having their septic tank unlocked or unlabeled. Although inspection data is limited, it appears that the need to continue a periodic inspection program is warranted.

As indicated by Table A-1, 581 sanitary permits were issued for new conventional

Figure A-4
Summary of Failing / Fatigued Conventional Systems
1995
total inspections 53



systems from January 1, 1990 through December 31, 1995. A majority of the permits were for installations in the sandy regions of the Towns of Suamico, Pittsfield, and Hobart. Although conventional systems will continue to provide on-site treatment for future rural development, its commonality may subside since the availability of choice lands in the northwest region of the county, where these type of systems are common, may begin to decline over the planning period.

Table A-4
Summary of 1995 Failing and Fatigued Conventional Systems

Number of conventionals inspected	53	
Number of fatigued systems	7	(13.2%)
Number of failed systems	1	(1.9%)

*1993 and 1994 inspection data not available.

Source: 1995 Brown County Zoning Summer Intern Inspection Report

Inspection Summary

Throughout the summers of 1993 to 1995, a total of 814 holding tanks, mound systems, and conventional systems were surveyed. These sites were selected to establish a representative sample of Brown County. Factors that qualified a site to be polled included previous inspections that called for a follow-up inspection and random selection of files. In addition, some older systems were chosen to see how technology stands up to the test of time.

Based on the three systems surveyed, it could be assumed that the holding tank is the most effective system, since all waste is treated by a treatment plant, but also the least desirable. The cost of pumping a holding tank is incurred by the owner. Unfortunately, this cost is sometimes diverted by improperly discharging wastewater to the surface. In addition, the inspection surveys indicate a high percentage of holding tanks require some form of servicing. Furthermore, estimates based on assumed water use indicate a concern that a significant amount of holding tank waste never makes it to a treatment facility. Therefore, off-site wastewater treatment systems are generally more desirable for the homeowner, as well as the County.

Mound soil absorption systems are generally effective at treating effluent; however, these systems appear more likely to show signs of fatigue or failure than conventional gravity systems. It is important that the systems be sized accordingly to handle the maximum use that the system will be exposed to over its life. In addition, it is important that activity be restricted over the absorption area of these systems. Driving a vehicle over the system can compact the soil and reduce the capacity of the system to treat effluent.

Preventative maintenance measures can be taken in addition to restricting activity on the surface. The most important is to have the septic tanks pumped regularly. Pumping removes the solids out of the systems that over time can enter the drain field and clog the soil pores that are vital to the operation of the system. Other products exist that can help increase the longevity of a system. Filters can be installed on the outlet of a septic tank that restrict the flow of solids into the drain field. There are also filters available that attach to the wash machine that will filter out lint and debris from clothing that can clog a drain field. The most effective way to increase the life of a system is by conserving water use. All in-ground systems eventually become fatigued and failure occurs soon after. Conservation, along with any of the preventative measure listed above, can delay the large cost of replacing a system. In Brown County, it is required that all soil absorption systems be pumped and inspected every three years. This code only pertains to systems installed after January 17, 1990. The code allows for evaluations and comparisons to be made to help monitor the program and assure private system treatment effectiveness.

Other Individual On-Site or Cluster Systems

Slow Sand Filtration

Slow sand filter systems consist of one or more beds of granular material designed to maintain aerobic conditions. Flow is intermittently dosed over the surface of the filter through a network of distribution pipes. A collection of pipes installed under the sand filter are used to collect the effluent for disposal in a soil absorption system.

There are three basic design variations of sand filters: buried, open and recirculating. Effluent from properly designed and maintained sand filters typically have BOD concentrations below 10 mg/l. Although current regulations do not permit this system for single-family use, it is anticipated that their use may increase if performance standards are adopted as part of proposed ILHR 83 revisions.

Constructed Wetlands

Constructed wetlands are a form of aerobic treatment which is based on the ability of a natural wetland to effectively treat contaminated wastewater. There are three basic forms of constructed wetlands: free surface water, subsurface flow, and hydroponic or nutrient film.

Free surface water design utilize plants rooted in relatively poor draining soil. The surface of the soil is flooded with wastewater which passes over and through the soil.

Subsurface flow systems allow wastewater to enter one end of the wetland which passes through the plant root system then out other end. Emergent wetland plants, such as rushes, cattails, reeds, and bulrushes, are typically used. These plants treat wastewater as it passes through the root zone.

Hydroponic or nutrient film systems are systems in which treatment occurs by plants which are suspended in the wastewater. The plants convert organic material and nutrients into plant mass while a film of micro-organisms growing on the plant roots account for the remainder of biological breakdown process. Constructed wetlands are not typically used as individual on-site disposal systems due to cost and space requirements. If ample suitable area exists, it appears more economical that a constructed wetland would serve a group or cluster of homes as opposed to an individual site. Brown County currently does not have any constructed wetland systems.

Aerobic Package Systems

Technology and equipment utilized by large municipal treatment plants can also be engineered on a smaller scale. These systems typically include all necessary treatment steps in a pre-assembled "package". Package systems can be separated into two (2) groups; fixed film and suspended growth. Fixed film systems utilize a film or layer of biological material which is attached to a growth media. The media is intermittently dosed with wastewater. During this process, organic material is converted into cell masses. Once the film weight exceeds the force, holding it to the media, a portion of the film will tear off from the media surface, an action known as sloughing. Sloughed biofilm is further degraded in another section of the unit, which is maintained in an aerobic state.

Disposal of Domestic Septage

Administrative Code NR 113 was adopted in 1987 to regulate septage disposal. NR 113 requires licensed pumpers to take all wastewater from holding tanks within 20 miles (shortest direct route by road) of a publicly owned treatment works (POTW) that is willing to accept, treat, and dispose of the wastewater (at a cost less than or equal to \$16.00 per 1000 gallons for 1996 to 1998, and \$18.00 per 1000 gallons for 1999 to 2001, and \$20.00 per 1000 gallons for 2002 to 2004) to that POTW for treatment. Map 6-1 delineates the outer 20-mile radius from the POTW's in Brown County which accept septage. Note that this NR 113 requirement does not apply to Shawano and Oconto Counties bordering Brown County.

The Green Bay Metropolitan Sewerage District (GBMSD) and City of De Pere Treatment plants accept septage. In addition, most of the smaller POTW's in Brown County also accept septage. Therefore, all of Brown County (and beyond) is within a 20-mile driving distance to a POTW which accepts septage. This means that disposal of wastewater from all holding tanks in Brown County must be discharged into a POTW all year long. No land disposal of holding tank wastewater by licensed pumpers is allowed.

In addition to the above requirement, disposal of wastewater from septic tanks located within the POTW's sewer service area, as shown on Map 6-1, must be at that POTW. Disposal of wastewater from holding tanks beyond the POTW's sewer service area but within the POTW's planning area, as shown on Map A-1, must

be at that POTW if the plant will accept the wastewater and if the cost figures are met. If the plant does not accept the septage or does not meet the cost figures, then the disposal can occur at any plant within a 20-mile radius of the pumped holding tank.

If the wastewater from holding tanks and other on-site systems is mixed in the same licensed pumping vehicle or if wastewater from within and beyond the 20-mile radius or POTW planning area is mixed in the same vehicle, then all of that wastewater must be taken to a POTW for disposal. This Sewage Plan is required to show sewer service areas, POTW planning areas and, as also required by NR 113, POTW holding tank service areas.

POTW holding tank service areas are shown on Map 6-1. The Green Bay Metropolitan Sewerage District treatment plant in Brown County is the only facility that has design capacity in their treatment works for septage disposal; however, most have capacity for treatment of septage. When a POTW does designate specific capacity for septage disposal or, when a POTW contracts for receipt of septage from a large (greater than 3,000 gallons per day) on-site system, Map 6-1 must be amended to reflect the additional holding tank service areas. Currently, only four on-site systems produce greater than 3,000 gallons per day of septage in Brown County.

Holding tank service areas are totally separate from the sewer service areas. Identification of holding tank service areas will require no calculation of projected acreages needed for such developments because these are beyond the sewer service area. Amendments to holding tank service areas will require no swap of acreages. These amendments will require the approval of the Brown County Planning Commission (after a suitable contract is approved by the receiving POTW). The Department of Natural Resources will approve holding tank service area amendments as they occur.

POTW planning areas have been drawn on Map 5-1 based upon facilities plans. Previous facilities plans were reviewed and on-going facilities planning efforts were added to generate the planning areas as delineated in this report. Notice that there is overlap in some cases between POTW planning areas.

Maps 5-1 and 6-1 show areas beyond the Brown County borders. Sewer service areas, holding tank service areas, POTW planning areas, and the 20-mile service radii of POTW's may extend beyond the county lines. Requests for service beyond Brown County will require the Department of Natural Resources to designate the Brown County Planning Commission as the management agency for these areas and implementation of those requests beyond Brown County will be treated the same as a request within the County.

Soil Absorption System Problem Areas

In addition to the data obtained from the Brown County Zoning Administrator's summer intern inspection program, soil absorption system failures have been documented through request for replacement or failed systems. Map A-2 reveals rural development areas which contain limitations, such as high groundwater and shallow bedrock, which significantly impact the type of replacement soil absorption system which can be used. In addition, older, confined, lot sizes in rural areas pose a limitation to the type of replacement system which can be used. Furthermore, all environmentally sensitive areas shown on Map 7-1 are considered potential problem areas for soil absorption systems. Often times, due to the degree of the limitations, only holding tanks can be approved as replacement systems in these areas.

Since 1980, several documented problem areas have been corrected through the development or expansion of public sewerage systems.

Operating sanitary districts created since 1980 to solve existing problem areas include: Suamico Sanitary District #1, Scott Sanitary District #1, Town of De Pere (Ledgeview) Sanitary District #2, Lawrence Sanitary District #1, Bayshore Sanitary District, Dyckesville Sanitary District, and Morrison Sanitary District #1.

Recently, the Pittsfield Sanitary District #1, the New Franken Sanitary District, and the Lark Sanitary District have been created to address other known on-site problem areas. Although none of the three aforementioned districts currently provide public sewer service, it is possible they may in the future, if determined cost-effective. In areas where public sewer does not appear cost-effective, the County should consider stronger enforcement and monitoring through the Zoning Administrator's Office. Consideration should also be given to the use of alternative types systems and technologies which may prove cost-effective for servicing cluster-type housing.

Recommendations:

Brown County should:

1. Recommend inspection, and if needed, upgrading of existing private waste disposal systems at the time of sale or conveyance of property ownership.
2. Consider the prohibition, by County ordinance, of holding tanks except as a last resort replacement system according to ILHR 83.
3. Consider use of the other on-site wastewater disposal systems in rural areas as discussed in this plan.

4. Further develop a public educational program to inform the public of on-site wastewater treatment systems and the associated operation and maintenance requirements.
5. Continue to institute county wide authority to assure that on-site wastewater disposal systems comply with the codes and are functioning correctly.
6. Continue to identify problem areas, enlist the support of the Brown County Planning Commission, County Zoning Administrator, Land Conservation Department, WDNR, and DILHR in providing technical assistance for resolution of the sewage problems.
7. Continue the monitoring and reporting system, developed by the County Zoning Administrator, for tracking disposal of septage and holding tank wastes and maintain the authority to prevent and prosecute illegal discharge/disposal activities and other code violations.
8. Monitor land division activity by community based on method of sewage treatment.
9. Complete on-site system inventory database on systems installed prior to 1980.

Appendix B

Staff and Responsibilities

Brown County Planning Commission
100 North Jefferson Street
Green Bay, Wisconsin 54301
Phone: 448-3400

Subject	Primary Contact Person
Interim Planning Director	Chuck Lamine
Air Quality	Joel Dietl
Area Development Plans	Marty Olejniczak
Brown County 2020 Land Use & Transportation Plan	Chuck Lamine
Certified Survey Map (CSM) Review and Approval	Marty Olejniczak
Comprehensive Plans (Local)	Mike Parmentier
Erosion Control Plans	Joel Dietl
Farmland Preservation	Mike Parmentier
Federal Transportation Programs	Cole Runge, Lisa Conard
Green Bay Area Mass Transit System Coordination	Cole Runge, Lisa Conard
House Numbering	Mike Parmentier
ISTEA	Cole Runge, Lisa Conard
Land Use Plans	Mike Parmentier
Maps and Air Photos (Information and Sales)	Adrienne Grun
Outdoor Recreation and Greenway Plans	Joel Dietl
Park Master Plans	Joel Dietl
Park, Recreation and Urban Forestry Grants	Joel Dietl
Population Projections	Mike Parmentier
Potable Water Studies	Mike Parmentier
Reapportionment	Mike Parmentier
Public & Private Sewer Extension and	
Building Sewer Reviews	Joel Dietl
Sewer Service Area Amendments	Joel Dietl
Stormwater Management Plans	Joel Dietl
Subdivision Plat Review and Approval	Marty Olejniczak
Technical Assistance Contracts	Chuck Lamine
Transportation Improvement Programs	Cole Runge, Lisa Conard
U. S. Census Data	Mike Parmentier
Zoning Ordinances	Mike Parmentier

Appendix C

Glossary

The words and phrases in this Glossary are frequently encountered in water works, sewer systems and wastewater treatment facilities.

Activated Sludge Process

A biological wastewater treatment process in which a mixture of wastewater and activated sludge is agitated and aerated. The activated sludge mixture (mixed liquor) is subsequently separated from the treated wastewater by sedimentation and wasted or returned to the process, as needed.

Absorption

Adhesion of molecules of a gas, liquid or dissolved substance to a surface.

Aeration

The bringing about of intimate contact between air and a liquid by one or more of the following methods: a.) spraying the liquid in the air; b.) bubbling air through the liquid; c.) agitating the liquid to spaces under napes, downstream from gates in conduits, etc., to relieve low pressures, and to replenish air entrained and removed from such confined spaces by flowing water.

Aerobic

Requiring, or not destroyed by, the absence of air or free elemental oxygen.

Area-wide Water Quality Management Plan

A plan for managing, protecting and enhancing groundwater and surface water quality which considers the interrelationship of water quality and land and water resources on an area-wide basis (hydrologic, political, or other).

Bacteria

A group of universally distributed rigid essentially unicellular microscopic organisms lacking chlorophyll. Bacteria usually appear as spheroid, rod-like or curved entities, but occasionally appear as sheets, chains or branched filaments. Bacteria are usually regarded as plants.

Best Management Practices

Practices, techniques or measures, identified in areawide water quality management plans, which are determined to be the most effective, practicable means of preventing or reducing pollutants generated from non-point sources to a level compatible with water quality goals.

Biological Process

The process by which the life activities of bacteria and other micro-organisms, in the search of food, break down complex organic materials into simple, more stable substances. Self-purification of polluted streams, sludge digestion and all the so-called secondary wastewater treatments result from the process.

Biological Wastewater Treatment

Forms of wastewater treatment in which bacterial or biochemical action is intensified to stabilize, oxidize and nitrify the unstable organic matter present. Intermittent gravity filters, contact beds, trickling filters and activated sludge processes are examples.

Biochemical Oxygen Demand (BOD)

The quantity of oxygen used in the biochemical oxidation of organic matter in a specified time, at a specified temperature and under specific conditions. A standard test used in assessing wastewater strength.

Building Sewer

That part of the drain system not within or under a building which conveys its discharge to a public sewer, private interceptor main sewer, privately-owned wastewater treatment system or other point of disposal.

Compliance Maintenance Annual Report (CMAR)

A report which the owner of a treatment works submits to the WDNR to describe the physical conditions and the performance of the owners' sewerage system during the previous calendar year.

Contractual Planning Agency

Any water quality planning agency in a "nondesignated area" of the state that has not been designated by the Governor, but is under contract with the WDNR to perform water quality planning functions.

Cost-Effectiveness Analysis

A systematic comparison of alternative means of meeting state water quality standards, effluent limitations or other treatment standards in order to identify the alternative which will minimize the total resource costs over the planning period. These resource costs include monetary costs as well as other environmental and non-monetary costs.

Designated Management Agency (DMA)

Any agency designated in an areawide water quality management plan having responsibility for implementing specific plan recommendations. This may be done through direct activities of the designated management agency or through delegation to other agencies or units of government.

Diffuser

A porous plate, tube, or other device through which air is forced and divided into minute bubbles for diffusion in liquids. Commonly made of stone, metal, or plastic materials.

Digestion

The biological decomposition of organic matter in sludge, resulting in partial gasification, liquification and mineralization.

Dissolved Oxygen (D.O.)

The oxygen dissolved in water, wastewater or other liquid, in milligrams per liter, parts per million or percent of saturation.

Effluent

Wastewater or other liquid, partially or completely treated or in its natural state, flowing out of a reservoir, basin or treatment plant.

Facility Plan

A report which the owner of a treatment works submits to the WDNR that consists of those necessary plans and studies directly relating to the construction of a proposed sewage treatment facilities or additions to existing sewage treatment facilities where additional treatment capacity is proposed.

Failing Private Sewage System

A private sewage system which causes or results in any of the following conditions:

- a. The discharge of sewage into surface water or groundwater.
- b. The introduction of sewage into zones of saturation which adversely affects the operation of a private sewage system.
- c. The discharge of sewage to a drain tile or into zones of bedrock.
- d. The discharge of sewage to the surface of the ground.
- e. The failure to accept sewage discharges and backup of sewage into the structure served by the private sewage system.

Final Effluent

The effluent from the final treatment unit of a wastewater treatment plant.

Final Sedimentation

The separation of solids from wastewater in a final settling tank.

Five-Day (BOD₅)

That part of oxygen demanded by biochemical oxidation of carbaceous material (as distinct from nitrogenous). It is determined by allowing biochemical oxidation to proceed for five days at a control temperature of 20 degrees C, under conditions specified in Standard Methods.

Flood Fringe

The remaining portion of the floodplain, lying outside of the floodway, which is needed to store flood waters. Water in the flood fringe tends to be slow moving and not as deep as water in the floodway.

Floodplain

Low lands adjoining lakes and rivers which will be covered by water during the regional flood. The floodplain is composed of two districts; the floodway and the flood fringe.

Floodway

An area covered by the deep fast moving water. It includes both the channel of the river or stream, and the adjacent floodplain lands required to carry off excess waters from the regional flood.

Holding Tank

A watertight receptacle for the collection and holding of wastewater.

Human Health Hazard

A substance, activity or condition that is known to have the potential to cause acute or chronic illness or death if exposure to the substance, activity or condition is not abated.

Indian or Tribal Lands

Lands owned by the United States and held for the use or benefit of Indian tribes or bands or individual Indians, and lands within the boundaries of a federally recognized reservation that are owned by Indian tribes or bands or individual Indians.

Infiltration/Inflow (I/I)

Extraneous flows in sewers include infiltration and inflow. Infiltration is water which enters a sewer system from the ground through such means as defective pipes, pipe joints, connections or manhole walls. Inflow is water which enters a sewer system through direct connections from such sources as roof leaders, storm water drains, manhole covers, etc.

Interceptor

Interceptor sewers derive their name from their original design purpose in older cities in which they intercepted the flow of smaller trunk sewers that was going directly and untreated into a river or a stream and carried that flow to a downstream treatment facility. Interceptor now refers to any pipe, regardless of size, that carries wastewater to the treatment plant.

Lateral

The pipe to which individual houses and business establishments attach.

Non-point Source

A land management or use activity contributing to runoff, seepage or percolation; and are sources which are not defined as a point source under s. 147.015(8), Stats.

Off-Site System

A sewage treatment system serving a multitude of structures in which the treatment facility is not located on the same parcels as the structures.

On-Site System (Private Sewage System)

A sewage treatment and disposal system serving a single structure with a septic tank and soil absorption field located on the same parcel as the structure. The system may serve more than one structure or be located on a different parcel than the structure.

Plan

An expression of what a community wants; it is a guide for decision-making by a government authority, such as the Planning Commission, the City Council, or Town Board. The advantages of reviewing the plan as an instrument of policy include the following:

1. The essential and uncluttered statement of policy facilitates public participation and an understanding of the planning process.
2. A plan that is a statement of policy encourages or even demands involvement on the part of public officials.
3. The plan as policy provides stability and a consistency in that it is less likely to be made obsolete by changing conditions.
4. Finally, the plan is a guide to the legislative bodies responsible for adopting land use controls, the commissions or boards that administer them, and the courts which must judge their fairness and reasonableness.

Point Source

Any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft from which pollutants may be discharged either into the waters or into a publicly owned treatment works. Point source shall not include diffused surface drainage or any ditch or channel which serves only to intermittently drain excess surface water from rain or melting snow and is not used as a means of conveying pollutants into waters of the state. Point source shall not include uncontrolled discharges composed entirely of storm runoff when these discharges are uncontaminated by any industrial or commercial activity, unless the particular storm runoff discharge has been identified by the Wisconsin Department of Natural Resources as a significant contributor of pollution.

Population Equivalent (P.E.)

A means of expressing the strength of organic material in wastewater. Domestic wastewater consumes, on an average, 0.17 lbs. of oxygen per capita per day, as measured by the standard BOD test. This figure has been used to measure the strength of organic industrial waste in terms of an equivalent number of persons. For example: If an industry discharges 1,000 pounds of BOD per day, its waste is equivalent to the domestic wastewater from 5,882 person ($1,000/0.17 = 5,882$).

Primary Treatment

The removal of between 30 and 35 percent of the organic pollutants and up to one-half of the suspended solids. Generally, the processes involved are a screening process for removal of heavy solids, a skimming process which removes floating solids, and a settling period to remove heavier suspended materials.

Priority Watershed

A watershed of manageable size, delineated in the areawide water quality management plan and selected according to the procedures specified in s. NR 120.07.

Public Participation Process

Those activities developed for involving individual members of the public, local governmental officials, and interest groups in the areawide water quality management planning process. These activities may include: the dissemination of information to the public including plan documents and summaries in lay terms, outreach activities to identify interested members of the public, the actual involvement of the public in the decision-making process which leads to the preparation and implementation of an areawide water quality management plan, and response to the public on how their input was used. This process normally includes both public meetings and public informational hearings.

Residual Wastes

Waste materials resulting from the treatment of wastes or wastewater.

Scum

The layer of film of extraneous or foreign matter that rises to the surface of a liquid and is formed there.

A residue deposited on a container or channel at the water surface.

A mass of solid matter that floats on the surface.

Secondary Treatment

Secondary treatment removes between 80 and 90 percent of the organic materials and over 80 percent of the suspended solids. It generally requires a multiple-step process involving one biological process and one or more processes for settling of suspended solids. Biological processes include activated sludge, stabilization ponds, and trickling filters. The objective of all of the steps in the secondary treatment process is to increase the amount of both organic and suspended matter which is removed.

Sedimentation

The process of removal of suspended solids from liquid by gravity settling.

Septage

The wastewater or contents of septic or holding tanks, dosing chambers, grease interceptors, seepage beds, seepage pits, seepage trenches, privies, or portable restrooms.

Septate

Sludge produced in on-site wastewater disposal systems.

Sewage

The wastewater flow from residential, commercial, and industrial establishments through the pipes to a treatment plant.

Sewer

The pipe, conduit, or other physical facility used to carry off wastewater.

Sewer Extension

The installation of a sewer or interceptor sewer or extension thereof to provide additional capacity for new development within the existing or proposed tributary area of the extension.

Sewer Moratorium

A ban or quota on new sewers, connections, building permits, subdivision approval or rezoning which is regulated at the state or local level.

Sewer Outfalls

Interceptor-sized pipes which transport, after treatment, the effluent of the sewage treatment plant to the final receiving body.

Sewer Service Area

That area presently served and anticipated to be served by a sewage collection system.

Sewerage

The system of sewers, physical facilities employed to transport, treat, and discharge sewage.

Sludge

The accumulated solids separated from liquids, such as water or wastewater, during processing, or deposits on bottom of streams or other bodies of water.

The precipitate resulting from chemical treatment, coagulation, or sedimentation of water or wastewater.

Sponsor

Any incorporated community or Town Sanitary District submitting a Sewer Service Area Amendment application.

Tertiary Treatment

Because of the large quantities of synthetic organic compounds and inorganic ions in the waste stream, many localities are being asked to extend their treatment processes. Tertiary or advanced waste treatment adds additional steps to primary and secondary treatment in order to provide additional removal of standard organic pollutants or to remove one or more specific organic compounds or inorganic ions from the stream. Common pollutants removed are phosphate and nitrate. The actual process chosen depends upon the ions or synthetic organic compounds to be removed.

Total Maximum Daily Load

The amount of pollutants specified as a function of one or more water quality parameters, that can be discharged per day into a water quality limited segment and still insure attainment of the applicable water quality standard. There are four components to the total maximum daily load: point source allocation, non-point source allocation, reserve capacity and margin of safety.

Town Sanitary District

A town sanitary district created under Subchapter IX s. 60.71. The town sanitary district boundaries are independent of established sewer service area boundaries as defined in the areawide water quality management plans.

Trunk

One of a set of large pipes which form the branches of the sewerage system. In many communities, it would be the pipe which collects sewage from a large portion of a community and then discharges it into an interceptor.

WPDES Permit

The Wisconsin Pollutant Discharge Elimination Systems permits issued by the department under Ch. 147, Stats., for the discharge of pollutants.

Waste Load Allocation

The assignment of a portion of the total maximum daily load to each of the discharges to a water quality limited segment, such that the summation of these individual loadings does not exceed the total maximum daily load.

Wastewater

The spent water of a community. From the standpoint of source, it may be a combination of the liquid and water carried wastes from residences, commercial building, industrial plants and institutions; together with any groundwater, surface water and storm water that may be present. In recent years, usage of the word wastewater has taken precedence over the word sewage.

Wastewater Influent

Wastewater as it enters a wastewater treatment plant or pumping station.

Water-Borne Disease

A disease caused by organisms or toxic substances carried by water. The most common water-borne diseases are typhoid fever, Asiatic Cholera, dysentery and other intestinal disturbances.

Water Pollution

Water pollution is defined in s. 147.015(19), Stats., means man-made or man-induced alteration of the chemical, physical, biological or radiological integrity of water.

Water Quality Standards

Standards established by the Wisconsin Department of Natural Resources pursuant to s. 144.025(s)(b), Stats., of the physical, chemical, biological characteristics or both of a water which must be maintained to make it suitable for specific uses.

Watershed

A hydrologically related land unit delineated for the purpose of instituting water quality management activities. Generally, the maximum size of a watershed should not exceed 200,000 acres.

List of Abbreviations

BOD	-	biological oxygen demand
CMAR	-	Compliance Maintenance Annual Report
DILHR	-	Wisconsin Department of Industry, Labor and Human Relations
DOA	-	Wisconsin Department of Administration
FmHA	-	Farmers Home Administration
GBMSD	-	Green Bay Metropolitan Sewerage District
gpcd	-	gallons per capita per day
gpd	-	gallons per day
I-	-	Interstate Highway
I/I	-	infiltration/inflow
lb/day	-	pound(s) per day
MGD	-	million gallons per day
mg/l	-	milligrams per liter
No.	-	number
O & M	-	operation and maintenance
POTW	-	publicly-owned treatment works
POWTS	-	privately-owned wastewater treatment system
SAS	-	soil absorption system
SSA	-	Sewer Service Area
STH	-	State Trunk Highway
USDA - NRCS	-	United States Department of Agriculture - Natural Resource Conservation Service
USEPA	-	United States Environmental Protection Agency
USGS	-	United States Department of the Interior Geological Survey
USH	-	U.S. Highway
WDNR	-	Wisconsin Department of Natural Resources
WPDES	-	Wisconsin Pollution Discharge Elimination System
WWTP	-	wastewater treatment plant

Appendix D

Brown County Sewage and Solid Waste Plan - 1972

Recommendations

Recommendations

The Brown County Sewage and Solid Waste Plan - 1972 stated recommendations from which goals, objectives, and policies could be inferred. The following are the recommendations from that Plan:

I. Prevent Urban Sprawl

- A. Guide the majority of urban development into the central urban service area.
- B. Maintain a "green belt", undeveloped area, around the periphery of the central urban area.
- C. Guide the spillover urban development into the outlying urban centers.
 - 1. Control development of on-site sewage systems within the County.
 - 2. Maintain the separate sewage facilities in the outlying urban centers.

II. Promote orderly and efficient development and economy of public facility design.

- A. Encourage growth to extend outward from the existing populated areas.
- B. Encourage use of existing facilities prior to construction of new or extension of existing facilities.
 - 1. Extend public sewer service outward from the existing served areas in a timed or phased manner.
 - 2. Maintain the separate sewage facilities in the outlying urban centers which cannot be economically connected to the central urban facility.

III. Establish a regional sewerage commission or authority.

- A. Use the commission/authority to establish overall service and facility expansion needs and timing, to identify pollution problems within the County and to recommend means of solving the identified problems.
 - 1. Seek legislation needed to form such an authority.

Appendix E

Applicability and Comparison of On-site Systems

APPLICABILITY OF ON-SITE SYSTEMS FOR SINGLE FAMILY RESIDENCES

	Budget Cost	Normal Site Conditions	Low Soil Permeability	Shallow Soil Over Impervious Layer ¹	Shallow Soil Over Fractured Bed Rock ²	High Soil Permeability ³	High Ground Water ⁴
Septic tank with conventional disposal field*	\$3,500	Yes	Yes	No	No	No	No
Septic tank with conventional disposal field with pressure distribution*	\$4,500	Yes	Yes	No	No	No	No
Septic tank with shallow sand filled pressure-dosed disposal field trenches*	\$4,500	Yes	Yes	Yes	Yes	Yes	Yes
Septic tank with intermittent sand filter with conventional disposal field	\$8,000	Yes	Yes	Yes	Yes	Yes	Yes
Septic tank with intermittent sand filter with conventional disposal field trenches with pressure distribution	\$9,000	Yes	Yes	Yes	Yes	Yes	Yes
Septic tank with intermittent sand filter with shallow leachfield trenches with pressure distribution	\$10,000	Yes	Yes	Yes	Yes	Yes	Yes
Septic tank with mound system with pressure distribution*	\$10,000	Yes	Yes	Yes	Yes	Yes	Yes
Septic tank with clear water ecological system	\$19,000	Yes	Yes	Yes	Yes	Yes	Yes

* Add Biologically Accelerated Treatment Plant (JET-BAT) to systems indicated for an additional cost of \$2,600.

- ¹ Sites with less than 56, but greater than 36 inches of suitable soil over layers of soil with a permeability rate greater than 60 min/in.
- ² Sites with less than 56, but greater than 36 inches of suitable soil over fractured bedrock.
- ³ Sites with less than 36 inches of suitable soil covers over fractured bedrock.
- ⁴ Sites with less than 56 inches of suitable soil above the high groundwater elevation.

Source: "Long Term Wastewater Management Evaluation of the Oneida Tribe of Indians Reservation" Report, McMahon Associates, 1995

COMPARISON OF ON-SITE SYSTEMS FOR A CLUSTER OF HOMES

	Land Requirement	Capital Budget Cost	Capital \$/Person	Annual O & M	Annual O & M Cost \$/Person
Individual septic tanks with group mound.	0.50 Ac	\$296,000	\$4,230	\$3,000	\$43
Individual septic tanks with constructed wetlands.	1.0 Ac	\$357,000	\$5,100	\$4,500	\$64
Individual septic tanks with group sand filter with mound.	0.75 Ac	\$320,000	\$4,570	\$4,500	\$64
Group septic or Imhoff tank with sand filter and mound.	0.75 Ac	\$280,000	\$4,500	\$4,000	\$57
Group septic or Imhoff tank with sand filter and constructed wetland.	1.50 Ac	\$342,000	\$4,890	\$5,000	\$71
Extended aeration package plant.	0.25 Ac	\$350,000	\$5,000	\$8,000	\$114
Fixed film aeration package plant.	0.25 Ac	\$420,000	\$6,000	\$20,000	\$286
Group septic or Imhoff tank with ESTR system.	0.1 Ac	\$420,000	\$6,000	\$20,000	\$286
Group septic or Imhoff tank with clear water ecological system.	0.75 Ac	\$322,000	\$4,600	\$7,500	\$107

Note: Capital costs above include collection system costs (2,000 feet of sewer).

Source: "Long Term Wastewater Management Evaluation of the Oneida Tribe of Indians Reservation" Report
McMahon Associates, 1995

COMPARISON OF TREATMENT SYSTEMS FOR SMALL COMMUNITIES

	Land Requirement	*Capital Cost	Capital Cost/Person	Annual O & M	Annual O & M Cost \$/Person	Anticipated Effluent Quality, mg/l BOD/SS
Group septic or Imhoff tanks with group mound.	3.5 Ac	\$812,000	\$1,160	\$8,500	\$12.15	30/30
Group septic or Imhoff tanks with recirculating sand filter with surface discharge.	1.0 Ac	\$510,000	\$730	\$22,000	\$31.45	10/10
Aerated lagoons	2.0 Ac	\$300,000	\$430	\$53,500	\$76.45	20/50
Stabilization pond	4.0 Ac	\$300,000	\$430	\$21,200	\$30.30	30/60
Extended aeration package system	0.5 Ac	\$590,000	\$845	\$68,100	\$97.30	20/20
Fixed film package system.	0.5 Ac	\$525,000	\$750	\$61,600	\$88.00	20/20
Oxidation ditch	0.5 Ac	\$575,000	\$825	\$63,760	\$91.10	20/20
Sequencing batch reactor	.50 Ac	\$750,000	\$1,075	\$72,460	\$103.50	20/20
Free surface water constructed wetland	5.0 Ac	\$1,870,000	\$2,670	\$25,250	\$36.10	10/20
Subsurface water constructed wetland	2.5 Ac	\$640,000	\$915	\$25,250	\$36.10	20/20
Hydroponic system	1.0 Ac	\$1,800,000	\$2,570	\$55,250	\$78.95	20/20

Note: Capital cost figures do not include collection system costs.

Source: "Long Term Wastewater Management Evaluation of the Oneida Tribe of Indians Reservation" Report
McMahon Associates, 1995

Appendix F

On-site System Inspection Forms

BROWN COUNTY ZONING OFFICE
111 N. Jefferson Street, P.O. Box 23600
Green Bay, WI 54305-3600
Phone: (414) 448-4490

TANK INSPECTION REPORT

OWNER _____

PROPERTY LOCATION _____

PARCEL NUMBER _____

INTERNAL NUMBER _____

INSPECTION DATE _____

INSPECTOR _____

REMARKS _____

COMMENTS _____

REINSPECTION DATE _____

REINSPECTED BY _____

=====

INSPECTION DATE _____

INSPECTOR _____

REMARKS _____

COMMENTS _____

REINSPECTION DATE _____

REINSPECTED BY _____

Brown County Zoning
Inspection Form for
Mounds, At Grade, In-Ground Pressure and Conventional Systems

Part I

Name: _____ Address: _____ Parcel No.: _____
Legal: _____ 1/4, _____ 1/4, Sec. _____, T _____ N, R _____ E County ID: _____
Installer Name: _____ Municipality: _____ Mound Type: _____
Building Type: _____ No. Bedrooms: _____ Date of Installation: ____/____/____
Dimension of Bed or Trench: W- _____ L- _____ If Trench, Number: _____

Part II (Nobody Home - Skip Part II)

Number of Persons: _____ Loads of Laundry / Week: _____ Service Routine: _____
Pump Problems: _____ Pumper Name: _____ Water Softener to Mound Y / N
Garbage Disposal Y / N, Date of Utilization: ____/____/____ Other: _____

Part III (Tanks)

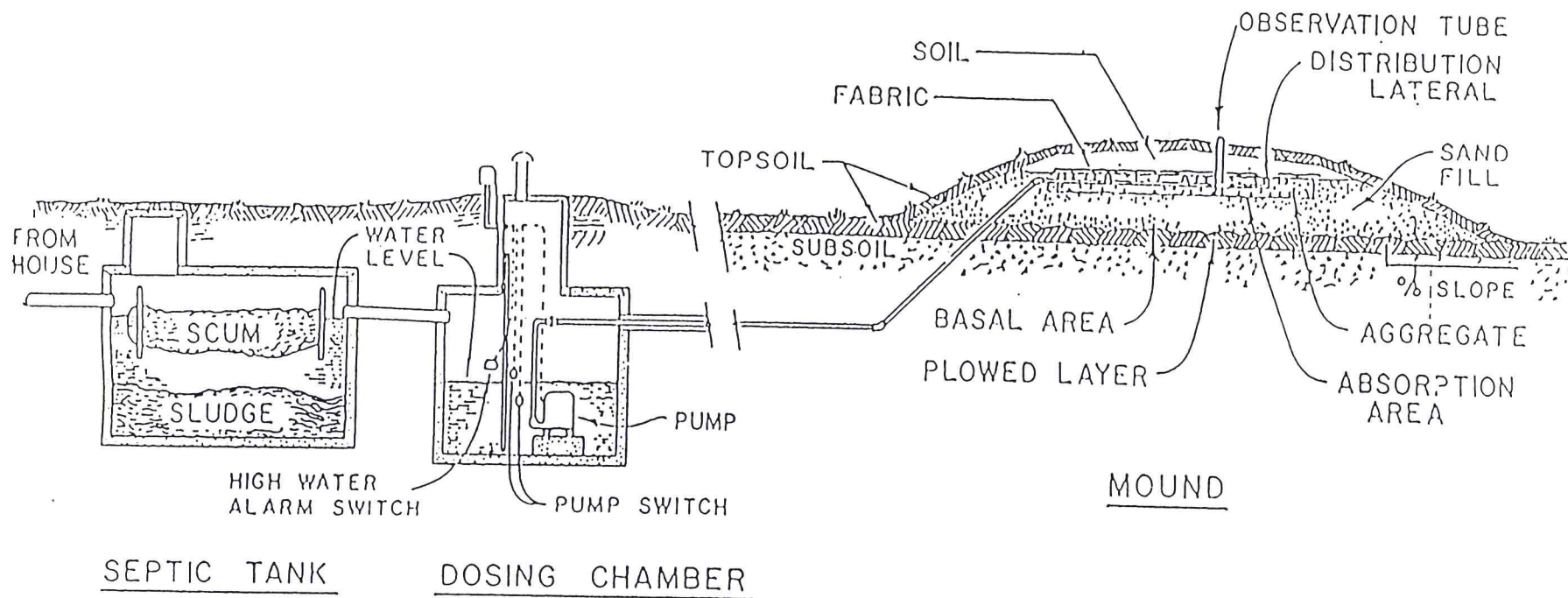
Septic Tank: Cover Locked Y / N, Cover Labeled Y / N, Proper Lid Y / N,
Overall Condition: _____ Amount of Scum in Tank: _____
Pump Chamber: Cover Locked Y / N, Cover Labeled Y / N, Proper Lid Y / N,
Overall Condition: _____ Amount of Scum in Tank: _____

Part IV (Mound)

Depth of Liquid in Observation Tubes: #1- _____ #2- _____ #3- _____
Is Area Soft or Spongy-on Toe? Y / N, on Side? Y / N, Near Trench or Bed? Y /
Is There Seepage of Effluent or Leakage? Y / N If so Where: _____
Downslope Obstructions: _____ Distance from Toe: _____
Mound Location: _____ Percent Slope: _____ % Ground Cover: _____
Soil Profile Description: _____

Inspected By: _____

Date of Inspection: ____/____/____



TAKING CARE OF YOUR SYSTEM

Your onsite treatment system represents a significant investment which you will want to protect. "An ounce of prevention is worth a pound of cure" was never more true than it is with onsite system care. With proper operation and regular maintenance, your system will function better and last longer. Committing a little attention to the care of your system is the best way to avoid the nightmare of a failing system. Read and follow the Do's and Don't's below for trouble free operation.

DO

- Conserve water to reduce the amount of wastewater that must be treated and disposed
- Repair any leaking faucets and toilets
- Only discharge biodegradable wastes into system
- Divert down spouts and other surface water away from your drainfield
- Keep your septic tank cover accessible for tank inspections and pumping
- Have your septic tank pumped regularly and checked for leaks and cracks
- Call a professional when you have problems
- Compost your garbage or put it in the trash

DON'T

- Use a garbage grinder
- Flush sanitary napkins, tampons, disposable diapers, condoms and other non-biodegradable products into your system
- Dump solvents, oils, paints, thinners, disinfectants, pesticides or poisons down the drain which can disrupt the treatment process and contaminate the groundwater
- Dig in your drainfield or build anything over it
- Plant anything over your drainfield except grass
- Drive over your drainfield or compact the soil in any way

Appendix G

Holding Tank Inspection Data

1993 HOLDING TANK SUMMARY FOR ALL INSPECTIONS MADE

City/Town/Village	A	B	C	D
Town of Bellevue	3	-	0	3
Town of Eaton	13	-	0	11
Town of Glenmore	8	-	0	8
City of Green Bay	9	-	0	2
Town of Green Bay	7	-	0	4
Town of Hobart	8	-	0	7
Town of Holland	10	-	0	9
Village of Howard	11	-	1	7
Town of Humboldt	13	-	0	7
Town of Lawrence	20	-	2	6
Town of Ledgeview	8	-	0	2
Town of Morrison	4	-	1	2
Town of New Denmark	5	-	0	3
Town of Pittsfield	7	-	0	2
Town of Rockland	3	-	0	3
Town of Scott	19	-	12	2
Town of Suamico	16	-	1	3
Town of Wrightstown	5	-	0	4
TOTAL	169	unknown	17	85
% of 169 H.T.	-	-	10.1%	50.3%

Column Code

A = number of holding tanks inspected

B = number of holding tanks abandoned or not found

C = number of holding tanks converted to public sewer

D = number of holding tanks in need of servicing (missing lock, chain or warning label, etc)

Source: 1993 Brown County Zoning Administrator's Holding Tank Report

1994 HOLDING TANK SUMMARY FOR ALL INSPECTIONS MADE

City/Town/Village	A	B	C	D
Village of Allouez	0	0	0	0
Town of Bellevue	6	0	0	5
Town of Eaton	18	0	0	16
Town of Glenmore	9	5	0	4
City of Green Bay	2	1	0	1
Town of Green Bay	11	0	1	11
Town of Hobart	11	2	0	5
Town of Holland	13	1	0	13
Village of Howard	5	0	0	3
Town of Humboldt	24	3	0	25
Town of Lawrence	26	2	8	15
Town of Ledgeview	10	0	0	8
Town of Morrison	8	0	0	10
Town of New Denmark	10	0	0	11
Town of Pittsfield	4	0	0	3
Town of Rockland	7	1	0	5
Town of Scott	4	0	0	1
Town of Suamico	12	0	0	8
Town/Village of Wrightstown	14	1	0	9
TOTAL	194	16	9	153
% of 194 H.T. inspected	-	8.25%	4.64%	78.9%

Column Code

A = number of holding tanks inspected

B = number of holding tanks abandoned or not found

C = number of holding tanks converted to public sewer

D = number of holding tanks in need of servicing (pumping, missing lock, chain or warning label, etc)

Source: 1994 Brown County Zoning Administrator's Holding Tank Report

1995 HOLDING TANK SUMMARY FOR ALL INSPECTIONS MADE

City/Town/Village	A	B	C	D
Village of Allouez	0	0	0	0
Town of Bellevue	8	0	0	8
Town of Eaton	12	1	0	9
Town of Glenmore	8	0	0	8
City of Green Bay	4	0	0	2
Town of Green Bay	13	0	0	9
Town of Hobart	15	0	0	11
Town of Holland	8	0	0	7
Village of Howard	10	0	0	8
Town of Humboldt	16	0	0	16
Town of Lawrence	18	0	0	14
Town of Ledgeview	15	0	1	13
Town of Morrison	4	0	0	4
Town of New Denmark	10	0	0	10
Town of Pittsfield	8	0	0	5
Town of Rockland	11	0	0	7
Town of Scott	5	0	1	2
Town of Suamico	18	0	0	11
Town/Village of Wrightstown	13	1	0	5
TOTAL	196	2	2	149
% of 196 H.T. inspected	-	1%	1%	76%

Column Code

A = number of holding tanks inspected

B = number of holding tanks abandoned or not found

C = number of holding tanks converted to public sewer

D = number of holding tanks in need of servicing (pumping to surface, missing lock, chain or warning label, etc.)

Source: 1995 Brown County Zoning Administrator's Holding Tank Report

. Department of Housing and Urban Development

ial Attention of:

CE PDR-95-05

Issued: December 14, 1995

Secretarial Representatives,
State/Area Coordinators, Economists,
Public & Indian Housing Division Directors,
Directors of Housing and Multifamily Housing

Expires:
Effective
until superseded

ss References:

ect: Transmittal of Fiscal Year (FY) 1996 Public
ing/Section 8
me Limits

This notice transmits revisions in the income limits used to
ne the terms "very low-income" and "low-income" in accordance
Section 3(b)(2) of the United States Housing Act of 1937, as
ded. These income limits are listed by dollar amount and
ly size. They are issued for each metropolitan and

etro-politan area
g the Fair Market Rent (FMR) area definitions applied in the
ion 8
ing Assistance Payments program.

Public Housing/Section 8 income limits are used to determine
income eligibility of applicants for the Public Housing,
ion 8, and other programs subject to Section 3(b)(2). The
sed income limits are based on HUD estimates of median family
me for FY 1996.

The most important statutory provisions relating to income
ts are as follows:

- "very low-income" is defined as 50 percent of the
median family income for the area, subject to specified
adjustments for areas with unusually high or low
incomes;
- "low-income" is defined as 80 percent of the median
family income for the area, subject to adjustments for
areas with unusually high or low incomes or housing
costs;

tribution: W-3-1

ious Editions are Obsolete
21B (3-80)

871 902

- where the local median family income is less than the State nonmetropolitan median family income, income limits are based on the State nonmetropolitan median; and,
- income limits are adjusted for family size so that larger families have higher income limits.

Low-Income Limits:

Very low-income limits are calculated using a set of formula tionships. The first step in calculating very low-income ts is to calculate what they would be if the four-person t is based on 50 percent of the estimated area median family me. Adjustments are then made if this number is outside of ula constraints.

More specifically, the very low-income limit for a -person family is culated as follows:

- (1) 50 percent of the area median family income is calculated and set as the tentative four-person family income limit;
- (2) if it would otherwise be lower, the four-person income limit is increased to the amount at which 35 percent of

the family's income equals 85 percent of the bedroom Section 8 FMR;

- (3) if it would otherwise be higher, the four-person income limit is reduced to the amount at which 30 percent of a four-person family's income equals 120 percent of the two-bedroom FMR;
- (4) to minimize program management problems, income limits are being held at FY 1995 levels in areas where FMR reductions would have resulted in lower income limits; and,
- (5) in no instance are income limits less than if based on the State nonmetropolitan median family income level.

The purpose of the second calculation is to adjust for areas where rental housing costs are unusually high in relation to the median income level. The third calculation makes a parallel adjustment to constrain income limits in areas where rental housing costs are unusually low relative to income levels. The fourth step avoids the confusion that would occur from small increases in income limits for a number of areas that would otherwise result from the change in the FMR standard from the 40th to the 45th percentile of rents paid by recent movers. The fifth step supersedes all other provisions in situations where it applies.

Income Limits:

Most four-person low-income limits are the higher of 80 percent of the area median family income or 80 percent of the nonmetropolitan median family income level. The actual calculation used, however, is to set the four-person low-income limit at 1.6 (i.e., 80%/50%) times the relevant four-person very low-income limit, subject to the constraint that it may not exceed the U.S. median family income level (\$41,600 for FY 1996). The very low-income limit as a starting point for calculating other income limits tied to Section (3)(b)(2) of the Housing Act of 1937 has the effect of adjusting income limits in areas with unusually high or low housing-cost-to-income relationships.

Family Size Adjustments:

By statute, family size adjustments are required to provide higher income limits for larger families and lower income limits for smaller families. The factors used are as follows:

Number of Persons in Family and Percentage Adjustments

2	3	4	5	6	7	8
80%	90%	Base	108%	116%	124%	132%

Income limits for families with more than eight persons are included in the printed lists because of space limitations.

each person in excess of eight, 8 percent of the four-person should be added to the eight-person income limit. (For example, the nine-person limit equals 140 percent $[132 + 8]$ of relevant four-person income limit.) All income limits are ded to the nearest \$50 to reduce administrative burden.

me Limit Area Definitions:

HUD income limit areas are the same as FMR areas. HUD ally uses current Office of Management and Budget (OMB) opolitan Statistical Area (MSA) and Primary Metropolitan istical Area (PMSA) definitions to define income limits areas use they closely correspond to housing market area nitions. The exceptions are counties deleted from opolitan areas because the OMB definitions were determined by to be larger than the housing market areas.

The HUD exceptions to the OMB definitions are counties ted from eight metropolitan areas whose revised OMB nitions encompass areas that were determined to be larger the housing market areas. In such instances, the counties considered by HUD to be core parts of the metropolitan areas assigned their own income limits based on county-level data er than on data for the metropolitan area as a whole. The t metropolitan areas and the respective counties deleted from e areas and assigned separate income limits are as follows:

AREA	Counties Deleted from OMB Definition
------	--------------------------------------

Atlanta, GA:

Carroll, Pickens, and Walton Counties

Chicago, IL:

DeKalb, Grundy and Kendall Counties

Cincinnati-Hamilton, OH-KY-IN:

Brown County, Ohio; Gallatin, Grant and Pendleton Counties in Kentucky; and Ohio County, Indiana

Dallas, TX:

Henderson County

Flagstaff, AZ-UT:

Kane County, Utah

Lafayette, LA:

St. Landry and Arcadia Parishes

New Orleans, LA:

St. James Parish

Washington, DC-MD-VA-WV:

Berkeley and Jefferson Counties in West Virginia; and Clarke, Culpeper, King George and Warren counties in Virginia

The only definitional changes from the FY 1995 income limits due to the two newly OMB-designated metropolitan areas of d Junction (Colorado) and Flagstaff (Arizona and Utah). d Junction is defined as consisting of Mesa County, Colorado. defines Flagstaff as consisting of Coconino County (AZ) and County (UT), but HUD treats Kane County as a separate metropolitan income limit area because it is not an integral part

he Flagstaff housing market area.

For purposes of HUD programs, income limits previously
oved using Indian Trust Land area definitions remain in
ct unless superseded by higher FY 1996 income limits based on
ent income limit area definitions.

Field Office Responsibilities:

HUD field offices with assisted housing program functions
responsible for maintaining records of income limits for
s within their jurisdiction. Notification of income limit
sions should be promptly distributed to program participants,
Field Offices should be prepared to make income limits
lable to the public upon request.

Requests from the public for sets of national or regional
me limits may be referred to HUD USER, whose toll-free number
-800-245-2691 (301-251-5154 in the Washington, DC area).
tions related to how these income limits apply to the
rams of State and other Federal agencies should be referred
hose agencies. Questions concerning the methodology used to
lop these income limits are addressed in the FY 1996 Income
ts Briefing Material supplied to all HUD field economists.
document is also available from HUD USER.

las P. Retsinas
stant Secretary for Housing -

Kevin E. Marchman
Acting Assistant Secretary

Housing Commissioner, H

Public and Indian Housing, P

chments

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las P. Restsinas
stant Secretary for Housing -
Housing Commissioner, H

Kevin E. Marchman
Deputy Assistant Secretary for
Public and Indian Housing,

**1995 Brown County Sewage Plan
Year 2015 Sewer Service Area
Amendment
Application Manual**

Brown County Planning Commission
Adopted June 5, 1996
Revised and adopted August 6, 1997



Brown County Planning Commission

100 North Jefferson Street Room 608
Green Bay, Wisconsin 54301-5026
920 448 3400
fax 920 448 3426

Dear Local Official,

The Brown County Planning Commission (BCPC) recognizes a mechanism for major revisions to sewer service area (SSA) delineations as essential for maintaining boundaries which are in the best interest of comprehensive land use planning, community development and water quality considerations. In order to provide a flexible yet equitable and uniform basis for revising sewer service areas consistent with this intent, the following amendment process has been developed.

This manual is your guide for requesting an amendment to the *1995 Brown County Sewage Plan*. It is our hope that you find the manual helpful in guiding you through the various steps of compiling an amendment request.

As always, Brown County Planning Commission staff are available to answer any questions pertaining to the manual and can be contacted by dialing 920 448-3400.

Sincerely,



Chuck Lamine
Interim Planning Director

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I. Introduction

A. What are Sewer Service Areas and why are they important?

The Federal Clean Water Act requires that all public sewage treatment plants in the country identify what areas they could serve within a 20 year time frame. In Wisconsin, such areas are called sewer service areas. These sewer service areas include all lands which are currently provided public sanitary sewer service, and those lands which are envisioned to receive public sanitary sewer service within 20 years. Only lands within a sewer service area are eligible to receive public sanitary sewer service. In addition, it is also necessary for the property owner to reach an agreement with the owner of the sewage treatment plant and with the entity who owns and operates the sanitary sewer collection system before such sewer service will be provided.

Federal and State regulations direct how the sewer service areas will be identified and who will do this. In Wisconsin, the Department of Natural Resources (DNR) is responsible for identifying all sewer service areas. In Brown County, the DNR has given this responsibility to the Brown County Planning Commission (BCPC). The BCPC identifies sewer service areas in its county sewage plans. Such plans were prepared in 1972, 1982, 1987, and 1995.

Using federal and state guidelines, the Brown County Planning Commission identifies sewer service areas for each community and/or sanitary district which has, or is envisioned to receive sanitary sewer service within the next 20 years. These guidelines are based, in large part, on state prepared population projections. Usually, the larger the expected population of a community, the larger its sewer service area can be.

Sound planning, engineering and environmental principals often encourage that development occur with public sanitary sewer service. Because of this, most communities use these sewer service areas to help plan their growth. Thus, the communities in Brown County work in cooperation with the BCPC to come up with a delineation for their sewer service area which will best meet their future needs.

Federal and state guidelines also allow the boundaries of the sewer service areas to be revised and adjusted when necessary. At a minimum, it is recommended that they be reviewed at least every five to ten years to determine if circumstances warrant a change of the sewer service area delineation.

B. What are Environmentally Sensitive Areas and why are they important?

The Federal Clean Water Act and federal and state regulations also require that any part of a sewer service area which, if developed, could result in an adverse

water quality impact, be specifically identified and not provided sewer service. An adverse water quality impact would be any harm to surface waters or ground waters often resulting from such actions as pollution, erosion, grading, or filling.

The Brown County Planning Commission refers to such areas as Environmentally Sensitive Areas (ESA). They include natural resource features such as lakes, rivers and streams, wetlands, shorelands and floodlands and, often times, steep slopes adjacent to these areas.

The Brown County Planning Commission may allow limited development within the ESA's for such purposes as public utility extensions or non-intensive recreational uses. For the most part, however, development, grading, or filling within these areas is prohibited.

The protection and preservation of these Environmentally Sensitive Areas can result in:

- ☐ cleaner and safer water for drinking and recreation;
- ☐ control of flooding and erosion;
- ☐ filtering of air and noise pollution; and
- ☐ provision of wildlife habitat.

Improper development of these areas can result in failing foundations of pavements and structures and wet and flooded structures and property.

When developing land within a sewer service area, all Environmentally Sensitive Areas must be identified and preserved to protect the environment and to prevent serious and costly development problems.

More detailed information about these Environmentally Sensitive Areas can be found in Chapter 7 of the 1995 Brown County Sewage Plan.

C. What are Amendments and why are they important?

The 1995 Brown County Sewage Plan does two very important things:

- ☐ It identifies and delineates a sewer service area (SSA) for each community and sanitary district in Brown County which has, or might receive, sanitary sewer service by the year 2015; and
- ☐ It identifies and delineates environmentally sensitive areas (ESA's) within the sewer service areas.

Any attempt to change those delineations is referred to as an amendment. There can be sewer service area changes, environmentally sensitive area changes, or both, but all are referred to as amendments. Each sewer service area or environmentally sensitive area amendment request must meet certain specific require-

ments and conditions which have been set forth by the Brown County Planning Commission and the Wisconsin Department of Natural Resources. Detailed information concerning these requirements and conditions are provided in Section G of this document.

D. Who can ask for Amendments?

Any official representative of the DNR, the county, a city, village, town or sanitary district can apply for an amendment. Such a representative is commonly referred to as the applicant.

E. Who is responsible for reviewing Amendments?

The Brown County Planning Commission and the Wisconsin Department of Natural Resources are responsible for reviewing all amendments. In addition, the local unit of government must also concur with the amendment.

F. When can Amendments be requested?

An amendment can be requested at any time. However, it is strongly recommended that the applicant get local approval of the change first then meet with the staff of the Brown County Planning Commission to discuss the change. This is very important because an amendment is reviewed only if the request is supported by the local unit of government. Also, the more information the applicant can provide supporting their request, the better the chances are that the amendment will be approved.

It is especially important that the applicant keep in mind that review by the Brown County Planning Commission and the Wisconsin Department of Natural Resources can sometimes take as long as three months, or even longer for especially complicated amendments. Remember, no sewer development or associated construction can occur until this review is complete and the amendment approved.

G. What kinds of Amendments are there?

In order to facilitate a quicker turn-around in the review of those sewer service area and environmentally sensitive area changes which are small in scope and impact, and to stream-line the review process, the Brown County Planning Commission has created four types of amendments:

- ☐ **Minor Sewer Service Area Amendments.** This type of amendment applies to any sewer service area boundary change which involves 5 acres of land or less, involves land located within or immediately adjacent to a

sewer service area, and does not result in the creation of a "hole" in the sewer service area.

- ❑ **Minor Environmentally Sensitive Area Amendments.** This type of amendment applies to any environmentally sensitive area boundary change which involves 5 acres of land or less, does not involve any wetlands or floodways, does not intrude more than halfway into any ESA buffer or to within 75 feet of a navigable waterbody, and does not result in any significant adverse water quality impact as determined by the Wisconsin Department of Natural Resources and the Brown County Planning Commission.
- ❑ **Major Sewer Service Area Amendments.** This type of amendment applies to any sewer service area boundary change which involves more than five acres of land, or which presents a unique or difficult to address situation.
- ❑ **Major Environmentally Sensitive Area Amendments.** This type of amendment applies to any environmentally sensitive area boundary change which involves more than five acres of land, or which involves wetlands or floodways, or which extends more than halfway into a ESA buffer or to within 75 feet of a navigable waterbody, or which results in a significant adverse water quality impact.

Another difference between major and minor amendments involves the length and depth of review these requests are subjected to:

- ❑ A major sewer service area or environmentally sensitive area amendment requires that the BCPC staff be given at least 45 days to review the formal request, that a public hearing be held, and that the BCPC staff prepare a staff report outlining their findings. A major amendment also requires formal action by the BCPC Board of Directors, and by both the northeast district office and Madison office of the DNR. Lastly, an application review fee of \$900 is also required.
- ❑ A minor amendment only requires 21 days for BCPC staff and northeast district DNR staff review. Subsequent to that review, the BCPC will notify the applicant of its findings by letter. An application review fee of \$200 is also required.

In addition to the four types of amendments noted above, the Brown County Planning Commission has also identified five amendment policies. Each type of major or minor amendment must also meet the criteria of at least one of the following amendment policies outlined in Section H of this manual.

H. What are Amendment Policies?

An amendment policy is a description of the justification and reasons for the sewer service area or environmentally sensitive area change. Both the DNR and the BCPC require that the proposed amendment be justified by sound planning, environmental and engineering principals. Such principals are typically based upon consistency with state official population forecasts, consistency with local, county, and state plans, ability to provide urban services, etc. The *1995 Brown*

County Sewage Plan has identified the following five policies for sewer service area and environmentally sensitive area changes:

- ☐ **Policy 1: To Correct Mistakes.** Sewer service areas and environmentally sensitive areas may be changed to correct map, data, projection, or allocation errors found in the county sewage plan.
- ☐ **Policy 2: Acreage Swap.** Sewer service areas may be changed as long as there is no net increase in the amount of land to be provided sewer service.
- ☐ **Policy 3: To Accommodate Existing Development.** Sewer service areas may be expanded to include areas of existing development provided that the area has been identified as an onsite sewage disposal problem area by the Wisconsin DNR and by the Brown County Planning Commission, and that it has been determined that the provision of public sanitary sewer service to this area is the most cost-effective alternative.
- ☐ **Policy 4: To Accommodate Special Regional Uses.** Sewer service areas may be expanded provided there is a documented need for public sanitary sewer service for a unique facility or development of regional or statewide significance.
- ☐ **Policy 5: To Reflect Proper Land Use Planning.** Sewer service areas and environmentally sensitive areas may be changed to reflect sound local and regional land use planning.

Each sewer service area and environmentally sensitive area amendment request must specify what type of amendment applies (major or minor, SSA or ESA), and must meet the requirements of at least one of the five amendment policies. Detailed information concerning the requirements and conditions of the five amendment policies are set forth in Part II of this manual.

I. How do I start?

The first step is to determine exactly what you want to do. When you know what property is involved and what it will be used for, check the Brown County Planning Commission's Sewer Service Area maps to see what, if any, changes need to be requested (the BCPC office has a larger, more detailed color map of each sewer service area and of the environmentally sensitive areas).

The second step is to check with the local unit of government to see if they will support your change. The Brown County Planning Commission will not review any change without local government support.

The third step is to contact the Brown County Planning Commission to arrange a meeting to discuss the change. The staff of the BCPC will let you know what information you need to provide and will answer any questions you may have about the amendment application manual.

The fourth step is to fill out the amendment application manual and gather any other information you need or want which supports your request. This can include maps, letters of support, technical studies, or special reports or plans.

The more detailed and complete the information is, the more likely that Brown County Planning Commission concerns will have been addressed. Amendment review, and the associated time frame for a decision does not begin until after all information requested in the amendment application manual is provided to the BCPC.

The last step is to provide the information to the Brown County Planning Commission. This must include, at a minimum:

- ☐ a map showing the requested change;
- ☐ a letter explaining the change and its reasons;
- ☐ a copy of the appropriate parts of the application manual with the information filled in; and
- ☐ a check to the Brown County Planning Commission to cover the cost of the review.

Detailed information on the criteria and procedures for the various amendments is set forth in the following sections of this manual.

II. Amendment Policies

This section of the Amendment Application Manual sets forth detailed information relating to the criteria and requirements of the five amendment policies. As previously noted, all amendments must be submitted under, and consistent with at least one of the following policies.

Policy 1: To Correct Mistakes

Sewer service area and/or environmentally sensitive area boundaries may be modified to correct errors in the maps, data, projections, or allocations of the Brown County Sewage Plan. The Brown County Planning Commission and the affected community shall jointly sponsor all amendment requests submitted under Policy 1.

Requirements/Criteria:

- ☐ The applicant must provide a letter and/or map to the Brown County Planning Commission staff highlighting the error in final maps, data, projections or allocations listed in the Brown County Sewage Plan. The letter or map shall be specific to the type and magnitude of the error. Brown County Planning Commission staff shall determine if amendments submitted under Policy 1 are subject to any further requirements.

Policy 2: Acreage Swap

Sewer service areas may be changed as long as there is no net increase in the amount of land to be provided sewer service.

Requirements/Criteria:

- ☐ The application must include copies of letters from all property owners directly affected by the swap proposal, agreeing to the applicant's intent to remove or add their property to the 2015 Sewer Service Area, or the application must include documentation that a public hearing was held by the applicant outlining the proposed sewer service area amendment, and allowing public comment and input regarding the suggested change.
- ☐ The application must include a map clearly identifying all the parcels included in the proposed swap and their current owners.
- ☐ The envisioned uses of the lands to be removed from and added to the sewer service area must be identified. In addition, the uses of the lands to be removed must be the same as that proposed for the lands to be added.

- ☐ The developable portion of the lands to be removed from the sewer service area must be equal in size to the developable portion to be added. However, recognizing the unlikely nature of "exact acre for acre swaps" applicants may be allowed up to a 5 acre "grace" allocation to assist in matching property line boundaries or other similar features.
- ☐ The areas to be added and removed must be vacant developable land. Inclusion of incidental developed lands or undevelopable lands may be allowed on a case by case basis to be determined by the Brown County Planning Commission.
- ☐ The lands to be added must be immediately adjacent to the sewer service area.
- ☐ The lands to be removed must not result in the creation of a "hole" or "island" in the sewer service area.

Policy 3: To Accommodate Existing Development

Sewer service area boundaries may be expanded, provided there is a documented need for public sanitary sewer service for areas of existing concentrated development identified as problem areas in the Brown County Sewage Plan. Existing concentrated development is defined as a geographic area with densities of development suitable for the efficient economic provision of sanitary sewer service.

Requirements/Criteria:

- ☐ The application must include a letter from the Brown County Zoning Administrator and/or Wisconsin Department of Natural Resources stating that on-site systems within the amendment request area are failing.
- ☐ A facilities plan must be prepared which indicates the extent of failing systems, the probability of other adjacent systems failing, and a detailed comparison of other alternatives which would also address the situation.
- ☐ The applicant must demonstrate that sanitary sewer service to the concentrated development is cost-effective, compared to other remedial alternatives. Cost-effectiveness shall also be determined by the customer's ability to pay for such sanitary service.
- ☐ The subject area must form a sanitary district or be annexed into the community providing the sewer service.
- ☐ The subject area need not be adjacent to an existing sewer service area.
- ☐ Inclusion of incidental non-septic system failing parcels, other developable land or undevelopable lands may be allowed on a case by case basis to be determined by the Brown County Planning Commission.

Policy 4: To Accommodate Special Regional Uses

Sewer service boundaries may be expanded, provided there is a documented need for sanitary sewer service for a proposed unique multi-community or regional facility or development. A unique facility or development is interpreted to represent a development which was not anticipated nor projected in the Brown County Sewage Plan but, if constructed, would provide a widespread benefit to a multi-community or regional area. It may also include a multi-community or regional development which requires a specific geographic location for which no other location can be utilized.

Requirement/Criteria:

- ☐ The application shall include a description of the unique facility or development and address how it will provide widespread benefit to the community and why no other location can accommodate the development.
- ☐ The subject area need not be adjacent to an existing sewer service area.
- ☐ Qualifying examples include public high schools, regional parks, prisons, landfills, regional airports, or other developments as deemed acceptable by the Brown County Planning Commission.

Policy 5: To Reflect Proper Land Use Planning

Sewer service area and/or environmentally sensitive area boundaries may be revised to accommodate the organized development needs of the communities, consistent with all the following land use planning standards.

Requirements/Criteria:

- ☐ The amendment area shall have a common boundary with the current sewer service area and must not create a void or island within the sewer service area.
- ☐ The proposed facility or development must be in accord with the community's comprehensive plan, official map, and area development plans, and the Brown County Year 2020 Land Use & Transportation Plan.
- ☐ All local land use and zoning approvals necessary for the proposed development must be granted.
- ☐ The receiving collection and treatment systems must be able to adequately transport and treat the projected wastewater from the area.

- ☐ The applicant must indicate what best management practices will be implemented to reduce or eliminate negative water quality impacts, including the ability to address point and non-point source pollution generated by proposed development through proper erosion control and stormwater management planning.
- ☐ The applicant must identify conservancy areas and ESA's within the amendment area, and whether development is precluded within these areas. The applicant shall also identify the location of all navigable and non-navigable streams, wetlands, and steep slopes.
- ☐ The applicant must identify what, if any, "housekeeping" programs, such as street sweeping, leaf collection, waste oil depositories, etc. the applicant has enacted to address non-point source pollution.
- ☐ The applicant must address their ability and intent to deliver other urban services to the proposed area. Services which must be addressed include: public water service, schools, parks, police and fire protection, and emergency rescue.
- ☐ The proposed revision must be in accord with the communities population projection acreage allocation formula set forth in the county sewage plan.
- ☐ All appropriate local, state and federal permits and approvals must be granted for the proposed development.
- ☐ The designated areawide water quality management agency (Brown County Planning Commission) and DNR must determine that there will be no significant adverse water quality impacts.

III. Minor Amendments

A. Minor Sewer Service Area Amendments

1. What qualifies as a Minor Sewer Service Area Amendment?

A minor sewer service area amendment is any request for a change to a sewer service area which:

- ☐ Totals five acres or less. This change can be within one location, or could be a combination of a number of separate locations, but must all be within one sewer service area, must total five acres or less, and must not involve any ESA's; and
- ☐ Is immediately adjacent to the current sewer service area. The area, or each separate area if more than one, must share at least one common border with the current sewer service area and must not result in any voids or islands in the sewer service area.

2. What do I need to do?

The first step is to arrange a meeting with the staff of the Brown County Planning Commission to discuss your request. At that time, any questions you may have can be answered, you can look at any more detailed maps that the BCPC may have, and the BCPC staff will confirm if you need an amendment and if it qualifies as a minor amendment. Furthermore, the BCPC staff will assist you in determining which of the five amendments policies apply.

The second step is to provide to the Brown County Planning Commission the following:

- ☐ A letter explaining the amendment request, specifically address who is requesting the amendment, the type of amendment, the amendment policy, and any other support for the amendment;
- ☐ A map or maps showing the location of the amendment request and other pertinent information such as sanitary district boundaries, existing and proposed sanitary sewers, land uses, zoning, natural resource features;
- ☐ A check to the Brown County Planning Commission in the amount of \$200 to help defray the cost involved in reviewing the amendment request;
- ☐ A completed minor sewer service area amendment application; and
- ☐ Any other information which would support this amendment.

3. Minor Sewer Service Area Amendment Application

Provide the following information:

- ☐ Location
- ☐ Acreage
- ☐ Existing Land Uses/Zoning
- ☐ Proposed Land Uses/Zoning
- ☐ Local Land Use Plan
- ☐ Area Development Plan
- ☐ Erosion Control Plan (may be required if adjacent to an ESA)
- ☐ Stormwater Management Plan (may be required if adjacent to an ESA)
- ☐ Other Permits or Approvals
- ☐ Letter from engineer or other qualified person regarding location and capacity of downstream sewers
- ☐ Local Unit of Government Support
- ☐ Annexation History and/or Intergovernmental Cooperation Agreements (if applicable)

4. Then what happens?

When all required materials are submitted to the Brown County Planning Commission, the staff will have seven days to review the materials for accuracy and completeness. At this time, the BCPC will contact the Wisconsin Department of Natural Resources, and any other concerned units or agencies of government, for their review of this matter. Should all information be in order, the BCPC will have another 14 days to complete their review. If the submitted information is incomplete or in error, staff review will not begin until this problem is corrected. By the end of the 21 day review period, the BCPC staff will submit a letter to the applicant informing them of their decision.

Should the Brown County Planning Commission staff approve the amendment request, as submitted or in a subsequent modified form, and should the applicant agree with the findings and decision of the BCPC staff, the agreed upon change is final and will be reflected in all county sewer service area planning.

5. What if I disagree?

Should the applicant disagree with the findings and decision of the Brown County Planning Commission staff, the applicant may then petition to be heard by the Brown County Planning Commission Board of Directors.

The procedure for petitioning for Brown County Planning Commission Board of Directors review is as follows:

- ☐ The applicant must submit a letter to the BCPC requesting Board of Directors review of the amendment request;
- ☐ The applicant must submit a check in the amount of \$900 to the Brown County Planning Commission to help defray the cost of further review of this matter (this matter is now considered a Major Amendment);
- ☐ The BCPC staff will then have 45 days to review this matter and to submit a report to the Board of Directors;
- ☐ A public hearing will then be held on this matter, to be scheduled by the BCPC staff. The applicant may be in attendance and may speak on their request;
- ☐ At the first scheduled meeting of the Board of Directors after the 45 day review period, and subsequent to the public hearing, this matter will be considered by the Board of Directors;
- ☐ The amendment request, the staff report, the public hearing comments, and the Board of Directors recommendation, will be submitted to the Wisconsin Department of Natural Resources for their review and consideration; and
- ☐ The Wisconsin Department of Natural Resources will then issue a decision on this matter. Their decision on this matter is final.

B. Minor Environmentally Sensitive Area Re-delineations

1. What qualifies as a Minor Environmentally Sensitive Area Re-delineation?

A minor environmentally sensitive area re-delineation is any request for a change to an Environmentally Sensitive Area which:

- ☐ Totals five acres or less. This change can be within one location, or could be a combination of a number of separate locations, but must all be within one sewer service area and must total five acres or less;
- ☐ Would not result in any water quality impacts. The subject amendment would not reduce the ESA to less than 75 feet from a navigable water body, and would not encroach upon a floodway or a wetland, and would not encroach more than halfway into any ESA buffer.

2. What do I need to do?

The first step is to arrange a meeting with the staff of the Brown County Planning Commission to discuss your request. At that time, any questions you may have can be answered, you can look at any more detailed maps that the BCPC may have, and the BCPC staff will confirm if you need an amendment and if it qualifies as a minor amendment. Furthermore, the BCPC staff will inform you of the various studies or plans which may be undertaken to help further refine the boundary of Environmentally Sensitive Areas. In addition, a Wisconsin Department of Natural Resources navigability determination or wetland delineation may be required.

The second step is to provide to the Brown County Planning Commission:

- ☐ A letter explaining the amendment request, specifically address who is requesting the amendment, the type of the amendment, the amendment policy and any other support for the amendment;
- ☐ A map or maps showing the location of the amendment request and other pertinent information such as sanitary district boundaries, existing and proposed sanitary sewers, land uses, zoning, location of water bodies, streams, wetlands, floodways, floodplains, and steep slopes;
- ☐ A check to the Brown County Planning Commission in the amount of \$200 to help defray the cost involved in reviewing the amendment request;
- ☐ A completed minor environmentally sensitive area re-delineation application and any other information which would support this amendment.

It can be noted that the following plans or studies may be necessary to provide the information needed to make a water quality impact determination (the applicant is responsible for all such studies) a detailed soil survey; a detailed vegetation survey; topographic mapping; flood studies; and a geotechnical study.

3. Minor Environmentally Sensitive Area Re-delineation Application

Provide the following information:

- ☐ Location
- ☐ Acreage
- ☐ Existing Land Uses/Zoning
- ☐ Proposed Land Uses/Zoning
- ☐ Local Land Use Plan
- ☐ Area Development Plan
- ☐ Erosion Control Plan (if applicable)
- ☐ Stormwater Management Plan (if applicable)
- ☐ Other Permits or Approvals
- ☐ Letter from engineer or other qualified person regarding location and capacity of downstream sewers
- ☐ Local Unit of Government Support
- ☐ Letter from State Historical Society (if applicable)
- ☐ Letters from the U.S. Fish and Wildlife Service and the Wisconsin Department of Natural Resources Bureau of Endangered Resources (if applicable)

4. Then what happens?

When all required materials are submitted to the Brown County Planning Commission, the staff will have seven days to review the materials for accuracy and completeness. At this time, the BCPC will contact the Wisconsin Department of Natural Resources, and any other concerned units or agencies of government, for their review on this matter. Should all information be in order, the BCPC will have another 14 days to complete their review. If the submitted information is incomplete or in error, staff review will not begin until this problem is corrected. By the end of the 21 day review period, the BCPC will submit a letter to the applicant informing them of their decision.

Should the Brown County Planning Commission staff approve the redelineation request, as submitted or in a subsequent modified form, and should the applicant agree with the findings and decision of the BCPC staff, the agreed upon change is final and will be reflected in all county sewer service area planning.

5. What if I disagree?

Should the applicant disagree with the findings and decision of the BCPC staff, the applicant may petition to be heard by the Brown County Planning Commission Board of Directors.

The procedure for petitioning for Brown County Planning Commission Board of Directors review is as follows:

- ☐ The applicant must submit a letter to the BCPC requesting Board of Directors review of the amendment request;
- ☐ The applicant must submit a check in the amount of \$900 to the Brown County Planning Commission to help defray the cost of further review of this matter (this matter is now considered a Major Amendment);
- ☐ The BCPC staff will then have 45 days to review this matter and to submit a report to the Board of Directors;
- ☐ A public hearing will then be held on this matter, to be scheduled by the BCPC staff. The applicant may be in attendance and may speak on their request;
- ☐ At the first scheduled meeting of the Board of Directors after the 45 day review period, and subsequent to the public hearing, this matter will be considered by the Board of Directors;
- ☐ The amendment request, the staff report, the public hearing comments, and the Board of Directors recommendation, will be submitted to the Wisconsin Department of Natural Resources for their review and consideration; and
- ☐ The Wisconsin Department of Natural Resources then issues a decision on this matter. Their decision on this matter is final.

IV. Major Amendments

A. Major Sewer Service Area Amendments

1. What qualifies as a Major Sewer Service Area Amendment?

A major sewer service area amendment is any request for a change to a sewer service area which:

- ☐ Totals more than five acres. This change can be within one location, or could be a combination of a number of separate locations, but in total involves more than five acres and does not involve any re-delineation of ESA's.

2. What do I need to do?

The first step is to arrange a meeting with the staff of the Brown County Planning Commission to discuss your request. At that time, any questions you may have can be answered, you can look at any more detailed maps that the BCPC may have, and the BCPC staff will confirm if you need an amendment and if it qualifies as a major amendment. Furthermore, the BCPC staff will assist you in determining which of the five amendments policies apply.

The second step is to provide to the Brown County Planning Commission:

- ☐ A letter explaining the amendment request, specifically address who is requesting the amendment, the type of amendment, the amendment policy and any other support for the amendment;
- ☐ A map or maps showing the location of the amendment request and other pertinent information such as sanitary district boundaries, existing and proposed sanitary sewers, land uses, zoning, natural resource features;
- ☐ A check to the Brown County Planning Commission in the amount of \$900 to help defray the cost involved in reviewing the amendment request;
- ☐ A completed major sewer service area amendment application; and
- ☐ Any other information which would support this amendment.

3. Major Sewer Service Area Amendment Application

Provide the following information:

- ☐ Location
- ☐ Acreage
- ☐ Existing Land Uses/Zoning
- ☐ Proposed Land Uses/Zoning
- ☐ Projected Population
- ☐ Projected Housing Units
- ☐ Local Land Use Plan
- ☐ Area Development Plan
- ☐ Erosion Control Plan
- ☐ Stormwater Management Plan
- ☐ Other Permits or Approvals
- ☐ Letter from engineer or other qualified person regarding location and capacity of downstream sewers
- ☐ Letter from sewage treatment plant operator
- ☐ Sewage Loading Calculations
- ☐ Local Unit of Government Support

- ☐ Annexation History and/or Intergovernmental Cooperation Agreements (if applicable)
- ☐ Letter from State Historical Society
- ☐ Letters from the U.S. Fish and Wildlife Service and the Wisconsin Department of Natural Resources Bureau of Endangered Resources
- ☐ Ability to provide other services

4. Then what happens?

When all required materials are submitted to the Brown County Planning Commission, the staff will have seven days to review the materials for accuracy and completeness. At this time, the BCPC will contact the Wisconsin Department of Natural Resources, and any other concerned units or agencies of government, for their review on this matter. Should all information be in order, the BCPC will have another 38 days to complete their review, submit a staff report to the Brown County Planning Commission Board of Directors for their review and consideration, arrange a public hearing on this matter, and transmit this information to the Board for their recommendation. If the submitted information is incomplete or in error, staff review will not begin until this is corrected.

The amendment request, the findings and recommendation of the Brown County Planning Commission staff report, the Board of Directors recommendation, and the public hearing comments will then be submitted to the Wisconsin Department of Natural Resources for their review and consideration.

5. What if I disagree?

Should the applicant disagree with the findings and recommendation of the Brown County Planning Commission Board of Directors, the applicant may indicate that to the Wisconsin Department of Natural Resources when the BCPC submits all materials and information to the DNR.

The Wisconsin Department of Natural Resources will review and consider all information, and then issue a decision on this matter. Their decision on this matter is final.

B. Major Environmentally Sensitive Area Re-delineations

1. What qualifies as a Major Environmentally Sensitive Area Re-delineation?

A major environmentally sensitive area re-delineation is any request for a change to an environmentally sensitive area which either:

- ☐ Totals more than five acres. This change can be within one location, or could be a combination of a number of separate locations, but in total involves more than five acres; or
- ☐ Encroaches into a wetland or floodway, or more than halfway into any ESA buffer or which encroaches to within 75 feet of a navigable waterbody; or
- ☐ Could result in a significant adverse water quality impact. A significant adverse water quality impact would result from any activity which would harm surface water or ground water, such as from erosion, grading, filling, or discharge of pollutants.

2. What do I need to do?

The first step is to arrange a meeting with the staff of the Brown County Planning Commission to discuss your request. At that time, any questions you may have can be answered, you can look at any more detailed maps that the BCPC may have, and the BCPC staff will confirm if you need an amendment and if it qualifies as a major amendment. Furthermore, the BCPC staff will inform you of the various studies or plans which may be undertaken to help further refine the boundary of Environmentally Sensitive Areas. In addition, a Wisconsin Department of Natural Resources wetland delineation or navigability determination may be required.

The second step is to provide to the Brown County Planning Commission:

- ☐ A letter explaining the amendment request, specifically address who is requesting the amendment, the type of amendment, the amendment policy, and any other support for the amendment;
- ☐ A map or maps showing the location of the amendment request and other pertinent information such as sanitary district boundaries, existing and proposed sanitary sewers, land uses, zoning, location of water bodies, streams, wetlands, floodways, floodplains, and steep slopes;
- ☐ A check to the Brown County Planning Commission in the amount of \$900 to help defray the cost involved in reviewing the amendment request;
- ☐ A completed major environmentally sensitive area re-delineation application; and
- ☐ Any other information which would support this amendment.

It can be noted that the following plans or studies may be necessary to provide the information needed to make a water quality impact determination (the applicant is responsible for all such studies):

- ☐ a detailed soil survey;
- ☐ a detailed vegetation survey;
- ☐ topographic mapping;
- ☐ flood studies and;
- ☐ a geo-technical study.

3. Major Environmentally Sensitive Area Re-delineation Application

Provide the following information:

- ☐ Location
- ☐ Acreage
- ☐ Description of affected natural resource features
- ☐ Existing Land Uses/Zoning
- ☐ Proposed Land Uses?Zoning
- ☐ Projected Population
- ☐ Projected Housing Units
- ☐ Local Land Use Plan
- ☐ Area Development Plan
- ☐ Erosion Control Plan
- ☐ Stormwater Management Plan
- ☐ Other Permits or Approvals
- ☐ Letter from engineer or other qualified person regarding location and capacity of downstream sewers
- ☐ Letter from sewage treatment plant operator
- ☐ Sewage Loading Calculations

- ☐ Annexation history and/or Intergovernmental Cooperation Agreements (if applicable)
- ☐ Local Unit of Government Support
- ☐ Letter from State Historical Society
- ☐ Letters from the U.S. Fish and Wildlife Service and the Wisconsin Department of Natural Resources Bureau of Endangered Resources
- ☐ Ability to provide other services

4. Then what happens?

When all required materials are submitted to the Brown County Planning Commission, the staff will have seven days to review the materials for accuracy and completeness. At this time, the BCPC will contact the Wisconsin Department of Natural Resources, and any other concerned units or agencies of government, for their review on this matter. Should all information be in order, the BCPC will have another 38 days to complete their review, submit a staff report to the Brown County Planning Commission Board of Directors for their review and consideration, arrange a public hearing on this matter, and transmit this information to the Board for their recommendation. If the submitted information is incomplete or in error, staff review will not begin until this is corrected.

The amendment request, the findings and recommendation of the Brown County Planning Commission staff report, the Board of Directors recommendation, and the public hearing comments will then be submitted to the Wisconsin Department of Natural Resources for their review and consideration.

5. What if I disagree?

Should the applicant disagree with the findings and recommendation of the Brown County Planning Commission Board of Directors, the applicant may indicate this to the Wisconsin Department of Natural Resources when the BCPC submits all materials and information to the DNR.

The Wisconsin Department of Natural Resources will review and consider all information, and then issue a decision on this matter. Their decision on this matter is final.

**Brown County Sewage Plan Update Steering Committee
Brown County Planning Commission**

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Dave Brenner
City of DePere
Dr. Jack Day
UW-Green Bay
Richard Hall
City of Green Bay
Jerry Lopas
Village of Ashwaubenon
Tom Meier
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